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LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS
1919. TRUSTEES' SERIES No. 34

ANNUAL REPORT OF THE PRESIDENT OF STANFORD UNIVERSITY

FOR THE TWENTY-EIGHTH ACADEMIC YEAR
ENDING AUGUST 31, 1919

THIS BEING THE SIXTEENTH REPORT SUBMITTED, TO WHICH
IS APPENDED THE ANNUAL REPORT
OF THE TREASURER

STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
1919

STANFORD UNIVERSITY PUBLICATIONS

TRUSTEES' SERIES

No.		DATE
1.	The Leland Stanford Junior University. A pamphlet of information	(No date)
2.	Address of Jane Lathrop Stanford to the Board of Trustees	February 11, 1897
3.	Address of Jane Lathrop Stanford to the Board of Trustees	June 1, 1897
4.	Address of Jane Lathrop Stanford to the Board of Trustees	May 31, 1899
5.	Address of Jane Lathrop Stanford to the Board of Trustees	October 3, 1902
6.	Address on "The Right of Free Speech," by Jane Lathrop Stanford to the Board of Trustees.....	April 25, 1903
7.	Petition filed in proceedings to establish and construe University Trusts	June 16, 1903
8.	Decree in proceedings to establish and construe University Trusts	July 3, 1903
9.	Inaugural address of Jane Lathrop Stanford as President of the Board of Trustees.....	July 6, 1903
10.	Organization of the Faculty of the University.....	March 31, 1904
11.	Report of the Organization Committee of the Trustees upon the Organization of the University Faculty	March 31, 1904
12.	First Annual Report of the President.....	December 31, 1905
13.	Second Annual Report of the President	April 30, 1906
14.	Third Annual Report of the President	December 31, 1906
15.	Fourth Annual Report of the President	December 31, 1907
16.	Trustees' Manual	November 1, 1908
17.	Fifth Annual Report of the President	December 31, 1908
18.	Sixth Annual Report of the President.....	December 31, 1909
19.	Seventh Annual Report of the President.....	December 31, 1910
20.	Eighth Annual Report of the President.....	December 31, 1911
21.	Ninth Annual Report of the President.....	December 31, 1912
22.	Addresses of Timothy Hopkins, Emmet Rixford and David Starr Jordan at the Dedication of the Lane Medical Library Building.....	January 1, 1913
23.	Tenth Annual Report of the President.....	July 31, 1913
24.	Addresses at the Installation of John Casper Branner, LL. D., as President of the University	October 1, 1913
25.	The Perfecting of the Promise, a sermon by Rev. Francis G. Peabody, D.D., March 1, 1914, commemorating the ninth anniversary of the death of Jane Lathrop Stanford; The Founders of the University, an address by Hon. William W. Morrow, LL. D., Founders' Day March 9, 1914	July 31, 1914
26.	Eleventh Annual Report of the President	October 30, 1914
27.	The Foundation Ideals of Stanford University, an address by Chancellor David Starr Jordan, LL. D., on March 9, 1915	June 1, 1915
28.	Trustees' Manual (2d edition)	August 1, 1915
29.	Twelfth Annual Report of the President.....	December 3, 1915
30.	Addresses at the Installation of Ray Lyman Wilbur, M.D., as President of the University.....	January 22, 1916
31.	Thirteenth Annual Report of the President.....	December 31, 1916
32.	Fourteenth Annual Report of the President.....	December 1, 1917
33.	Fifteenth Annual Report of the President.....	December 1, 1918
34.	Sixteenth Annual Report of the President.....	December 31, 1919

TABLE OF CONTENTS

PRESIDENT'S REPORT		PAGE
TRUSTEES		5
BUILDINGS		6
TIMOTHY HOPKINS ROOM		7
PENSION SYSTEM		7
CAMPUS CHANGES		8
TRANSPORTATION AND ROADS		9
FIELD ARTILLERY UNIT		9
WAR SERVICE		10
HONOR CERTIFICATES		10
ROLL OF HONOR		12
MEMORIAL BUILDING		12
FACULTY:		
War Service		14
Absences		18
Resignations		19
Promotions		19
New Appointments		19
Summer Quarter Appointments		20
Retirement		20
Deaths		20
CAMP FREMONT		23
NEW DEPARTMENTS		23
NEEDS OF THE UNIVERSITY AND FINANCIAL REARRANGEMENTS		23
DEVELOPMENT COMMITTEE		30
RESEARCH		31
WATER SUPPLY		31
STUDENTS:		
Attendance		31
Limitation of Students		32
Welfare of Students		33
Incidental Fees		35
Student Conduct		36
Union Central Accounting Office		39
Scholarship		40
BOARD OF ATHLETIC CONTROL		41
GIFTS		41
REPORT OF THE TREASURER		42

APPENDICES

I. GIFTS TO THE UNIVERSITY	47
II. DEPARTMENTAL REPORTS:	
Anatomy	50
Applied Mathematics	52
Bacteriology and Experimental Pathology	53
Botany	53
Chemistry	56
Civil Engineering	59
Economics and Political Science	61

Education	63
Graphic Art	65
Electrical Engineering	66
English	68
Entomology and Bionomics	72
Geology and Mining	73
Germanic Languages	77
Greek	79
History	79
Hopkins Marine Station	85
Latin	86
Law	87
Mathematics	90
Mechanical Engineering	91
Medical School	93
Lane Hospital and Stanford University Hospital	94
Medicine	99
Obstetrics and Gynecology	102
Pathology	104
Pharmacology	104
Surgery	105
Military Science and Tactics	108
Philosophy	110
Physical Training and Personal Hygiene:	
Encina Gymnasium	111
Roble Gymnasium	112
Physics	113
Physiology	115
Psychology	116
• Romanic Languages	117
Zoology	119
III. COMMITTEE REPORTS:	
Athletics	121
Board of Athletic Control	122
Public Exercises and Literary Contests	125
Public Health	130
Scholarship	131
Student Affairs	135
Vocational Guidance	136
IV. MISCELLANEOUS ADMINISTRATIVE REPORTS:	
Registrar	138
Librarian	144
Dean of Men	152
Dean of Women	153
Appointment Secretary	159
University Chaplain	161
Curator of Museum	164
V. PUBLICATIONS OF THE FACULTY	167

PRESIDENT'S REPORT

TO THE HONORABLE BOARD OF TRUSTEES:

Gentlemen: The academic year beginning September 1, 1918, and ending August 31, 1919, which is the subject of the following report, was of unusual interest. Its inception was simultaneous with the great American effort on the Western Front in Europe. The whole aspect of the University was one of war. Practically all of the students of military age were regularly enlisted as privates in the American Army and assigned to the Students' Army Training Corps. A considerable number of the faculty were absent upon various forms of war service. An intense spirit of patriotism and enthusiasm pervaded the whole institution. With the signing of the Armistice on November 11th a notable change took place, both in the spirit and activities of the University. A period of adjustment, which presented many difficulties, lasted for several months. It was not until the beginning of the spring quarter that normal university conditions were established. In spite of the situation above outlined the year was one of progress and definite advance was made in a number of directions.

TRUSTEES

It is my sad duty to record the death of Trustee Vanderlynn Stow on July 13, 1919. Mr. Stow was one of the best friends that Stanford University has ever had. He made a unique and lasting contribution to the welfare of the University. His final services were associated with the masterly management of the sale of the various ranch properties of the University. It is my privilege to record the resolutions passed by the Board of Trustees and by the Academic Council in honor of Mr. Stow.

Resolution of the Board of Trustees, August 1, 1919:

The untimely death of our associate trustee, Vanderlynn Stow, has taken a supporting column from Stanford University. His sound judgment, his vigorous initiative, his skill in administration, his devotion to

duty, inspired strength and emulation in his colleagues. His courtesy, his self-effacement, and his consideration were elements of endearment. His activities as a responsible and trusted officer led to success and inspired the confidence of his associates. As a college man his interest in University matters and in student affairs was complete and sympathetic. Had he been a son of Stanford University, he could not have been more loyal or devoted. The esteem and regard with which he was held in public estimate and by all those with whom he came in contact in his many activities, were but a fitting tribute to his character and to the man. We loved and honored him in life and shall always hold his memory dear.

Resolution of the Academic Council, January 9, 1920:

Mr. Vanderlynn Stow, Treasurer and Business Manager of the University, died in San Francisco July 13, 1919. Mr. Stow became a member of the Board of Trustees in 1906. He was made assistant treasurer in 1909, assistant business manager in 1912, treasurer and business manager in 1914. In this latter capacity his entire time was devoted to the service of the University, and the nature of his duties brought him into close contact with all the phases and problems of University management. The Academic Council of the University desires to put on record its appreciation of his devotion to the interests of the University, his courteous consideration of individual difficulties and points of view, his active sympathy and co-operation in furthering projects for increasing the facilities and widening the influence of Stanford University. His death is a loss to the University, and his personal qualities and services will be gratefully remembered.

Mr. J. Leroy Nickel was re-elected Trustee on May 20, 1919.

Mr. Thomas Tingey Craven Gregory, Stanford '99, was elected Trustee on June 6, 1919, vice Mr. Thomas Welton Stanford.

BUILDINGS

The new library building was completed and occupied in July, 1919.

During the year the aerodynamic laboratory was completed and occupied.

The sum of \$600 was appropriated for the installation of a fire-alarm system in Roble Hall.

At Encina Hall \$12,000 was appropriated for renewing and improving the shower baths.

Alterations to the extent of \$1,275 were provided for in the Engineering building.

The old Library building has been remodeled for an Administration building to house the offices of the President, Registrar,

Comptroller, Dean of Women, Dean of Men and the Appointment Secretary. The building formerly used for administration purposes will be remodeled to suit the needs of the German department. The School of Education will occupy the building vacated by German. The old Business Office is to be used by the Greek and Latin departments, while their present quarters will be made available for the department of Romanic Languages.

The building at the eastern corner of the Quadrangle, now occupied by the departments of English, Economics, and History, is much overcrowded. Plans for relief of this condition have not as yet been completed.

Roble Hall, the new residence hall for women students, opened with the autumn quarter, 1918-19, with every room filled. Parents, students, and friends of the University have expressed general satisfaction with the arrangements and furnishings, and visitors from other institutions have stated that the Hall compares very favorably with other modern residence halls for women.

TIMOTHY HOPKINS ROOM

By action of the Board of Trustees on January 31, 1919, a room in the new Library Building was set aside for general reading, to be known as the Timothy Hopkins Room, in recognition of the many services rendered by Trustee Hopkins to the Library.

PENSION SYSTEM

A plan has been submitted to the University by the Carnegie Foundation for insurance and annuity for college teachers. This is to replace the existing Carnegie pension system. A large majority of the faculty will continue to receive benefits from the Carnegie Foundation; but those reaching the age of sixty-five years after 1923 can not retire on full pension, but will receive only two-thirds. Since the University retirement age has been set upon recommendation of the faculty at sixty-five, it is necessary to devise a plan that will provide sufficient funds to make it possible to retire all members of our faculty upon the full pension to which they would have been entitled had the Carnegie Foundation not changed its rules. It is also imperative to arrange for pensions for all members of the staff who have been

appointed since November 17, 1915. This problem has been made a subject of considerable study by a special committee of the Academic Council and by a committee of the Trustees. The Academic Council has unanimously recommended that the Board of Trustees provide a pension scheme. The whole plan requires further consideration.

CAMPUS CHANGES

A definite segregation of the University campus as distinct from the Palo Alto Farm was made by the Board of Trustees at their meeting on December 27, 1918, when the following resolution was passed:

"That the campus be defined as that portion of the Palo Alto Farm bounded on the north by the highway between Menlo and Mayfield, on the east by a line running approximately from the pumping station on the county road to the present county road near Frenchman's Lake, and the said line continuing through the gap in Frenchman's Lake to where it would meet a line to be established on the south and back of San Juan Hill; on the south by the present county road south of Lake Lagunita and extending back of San Juan Hill to the canyon in Frenchman's Lake; and on the west by a new road commencing at the south line road near the southwest end of Lake Lagunita, being the intersection of the county road and the prolongation of line of Governor's Avenue; and then extending to Governor's Avenue; thence along Governor's Avenue to a new road to be laid out, and to a point on the county road between Menlo and Mayfield, and near the Pacific Gas & Electric Company's transformer station."

This is an important change in policy, as it permits of the development of a University plant and campus under the more immediate control of the President and Comptroller, and removes the campus from the investment assets proper of the University.

It is hoped that the planting scheme now going forward under the direction of Mr. McLaren will eventually embrace the whole campus. The planting in the courts of the University Quadrangles has gone forward during the year, and a new charm has been added to the buildings.

The definition of a campus emphasizes the great advantages that Stanford University enjoys as a rural university. There is

an unusual opportunity for a solidarity and democracy in the student body of the University impossible under city conditions.

TRANSPORTATION AND ROADS

With the erection of the new Library and the Thomas Welton Stanford Art Gallery, the first two buildings of the outer Quadrangle to the east, the problem of transportation has become one of pressing importance. The original plan of the University, under the general guidance of which all of the building plans have been made, calls for three quadrangles spread out as a long rectangle in between the residence district of the University and the town of Palo Alto. It is necessary to devise a system of roads so that these three quadrangles can practically be an isolated unit without ordinary vehicular traffic between the quadrangles. In order to bring this about it is necessary to develop roads both to the east and west of the proposed outer quadrangles, connecting them with a loop road extending from Alvarado Row, by the Post Office, through to the front of Roble Hall, the women's dormitory.

It is very important to have the largest possible number of members of the faculty residing upon the campus. Fortunately, many already are either occupying residences owned by the University or have constructed dwellings upon lots leased from the University. It is important that every reasonable facility be provided to make life upon the campus attractive, not only for the members of the faculty but also for the students. With the establishment of the campus and the bringing into the University plant of the cottages owned by the University and leased by professors, there is reason to hope for the most favorable conditions.

It is planned to concentrate the activities of the Corporation Yard and to move the foremen's cottages and other buildings now in and connected with the present Corporation Yard to a site just west of the Roble Gymnasium near Governor's Avenue. This much-needed step will markedly improve the appearance of the campus and inaugurate the development of a real center for the life and interests of the women students.

FIELD ARTILLERY UNIT

During the year a unit of the Field Artillery was established in connection with the Reserve Officers' Training Corps. The

following officers were detailed to have charge of this unit: Colonel Leroy P. Collins, Major Howard Eager, and Captain Edward A. Flanders.

Barracks for thirty non-commissioned men and sheds for sixty horses are in process of construction.

WAR SERVICE

As outlined in the President's Report for the previous academic year, the Students' Army Training Corps was organized in the University along the lines of the general plan therein published. Captain Samuel M. Parker, U. S. Army (retired), was the commanding officer.

In spite of difficulties associated with the temporary quarters provided for mess and the crowding of Encina and Sequoia Halls, which were used as barracks, there was a fine spirit of service in the student body. The ordinary social activities of the students were largely done away with. Athletics were conducted under the auspices of the officers of the S. A. T. C. The activities of fraternities practically ceased. Some of the fraternity houses were taken over by the University for residence halls for the use of students not liable for military service.

In spite of the widespread influenza epidemic there was no demoralization of the work of the students or of the University faculty. A temporary mess hall accommodating twelve hundred men was erected between the Library Building and Alvarado Row. It was hoped that this could form the basis for proper eating accommodations for all of the students; but satisfactory arrangements for its purchase could not be made with the War Department.

With the signing of the Armistice, the S. A. T. C. was replaced by the Reserve Officers' Training Corps, and the former regulation of the University regarding the required military or physical training during the first two years in the University was put into effect.

HONOR CERTIFICATES

Following action by the Academic Council and the Board of Trustees honor certificates were presented at the annual Commencement, June 16th, to all students who withdrew from the University before graduation to enter service in the army or

navy of the United States. Parents or relatives of Stanford men and women who had lost their lives in the service of their country were likewise given "roll of honor" certificates.

Certificates of Honor for students leaving college to enter the armed service of the United States were presented to 722.

The Leland Stanford Junior University in recognition of the patriotism of John Smith, of the class of nineteen hundred and seventeen, hereby witnesses that he left his academic studies to enter the armed service of the United States in defense of liberty and democracy that right and justice might prevail among nations. In testimony whereof the University has awarded this certificate of honor. Given at Stanford University, California, this sixteenth day of June, nineteen hundred and nineteen.

(Signed) RAY LYMAN WILBUR,
President of the University,
W. MAYO NEWHALL,
President of the Board of Trustees.

Certificates of Honor for students leaving college to enter the armed service of the Allies were presented to 18.

The Leland Stanford Junior University, in recognition of the patriotism of John Smith, of the class of nineteen hundred and eighteen, hereby witnesses that he left his academic studies to serve in the Great War in defense of liberty and democracy that right and justice might prevail among nations. In testimony whereof the University has awarded this certificate of honor. Given at Stanford University, California, this sixteenth day of June, nineteen hundred and nineteen.

(Signed) RAY LYMAN WILBUR,
President of the University,
W. MAYO NEWHALL,
President of the Board of Trustees.

Roll of Honor certificates for parents of students who died in service were presented to 68.

The Leland Stanford Junior University has proudly inscribed the name of John Smith, of the class of nineteen hundred and sixteen, on the Roll of Honor of her sons who, entering the armed service of the United States in the Great War, gave their lives in defense of liberty and democracy that right and justice might prevail among nations. Given at Stanford University, California, this sixteenth day of June, nineteen hundred and nineteen.

(Signed) RAY LYMAN WILBUR,
President of the University,
W. MAYO NEWHALL,
President of the Board of Trustees.

ROLL OF HONOR

The complete list of the Stanford men and women who lost their lives in the service of their country is as follows:

FACULTY.—Shadworth O. Beasley, Robert Edouard Pellissier.

ALUMNI, FORMER STUDENTS, AND STUDENTS.—Clarence Emir Allen, Jr. (A. B., Yale, 1913), Albert Boyce Aten, Harold Vincent Aupperle, David D. Barrett, David Morse Barry (B. S., Harvard, 1915), Loui Charles Beauman, Eaton Blickhahn, Robert Joseph B. Kenkrager, Alexander Leland Brewer, James Pomeroy Brown, Harold Herbert Burrows (A. B., 1916), Chester Arthur Chiles (A. B., 1917), Daniel Mabree Clark, James P. Clark, Jr., Greayer Clover, Thomas Jefferson Clunie, Norman Eugene Doan, Gerald Leufkin Favinger, James Grant Fergusson (A. B., 1908), Hiram Baker Fisher, Jr., Hiram Cornell Fisk (A. B., 1910), Stuart Freeman, Frank Jacob Gard (A. B., 1914), Wilmer Jackson Gross (A. B., 1916), Norman Marshall Halcombe (A. B., 1913), Arthur Gainsford Halm (A. B., 1914), Lorenz Max Hansen, Llewellyn Powell Hartshorn, Edmund Hedemann, James Stephen Higley, Ward Davis Howard, Horace Hadley Hussey, Rex Whitefield Ish, Clement Jacomini, Arthur Clifford Kimber, Carl Luhning Kohlmeier, Millard Ernest Lawson (A. B., In Memoriam, 1919), Emery Eric Leach, Ernest Alexander Love, Harold Robert McMeans, Dorothy Amanda Metz (A. B., 1917), DeWitt Charles Mitchell, Harold Sidney Morgan (A. B., 1912), Alan Hammond Nichols, Ralph Matthews Noble (A. B., 1913), Frank Aaron Ordway, William Robert Organ, Archibald Edward Preston (A. B., 1905), Caldwell Colt Robinson, Milton Theodore Rodig (A. B., 1915), Kenneth Pace Russell, Bradley Varnum Sargent, Jr., Harold Holden Sayre, Adrian Madison Shepherd, Ralph Townsend Simpson, James Alsworth Sparks, Joseph Harold Stearn, Palmer Wilkinson Taylor, Ward Clark Tittle, Augustus Topp, Harry Coburn Turner (A. B., 1897), Thomas Norton Turner (A. B., 1914), Clarence Ellis Tyrrell, William Irvin Weaver (A. B., 1913, A. M., 1914), Lewis Edmund White, Albert Fred Woolley, Ernest Neall Wright, Jr. (A. B., In Memoriam, 1919), Solomon Zeorian.

Their names are to be placed upon an official Honor Roll of the University either in the Memorial Court or upon the walls of the Memorial Building, for which funds are being raised by a Committee of Fifty under the leadership of Professor Emeritus John Maxson Stillman.

MEMORIAL BUILDING

After the cessation of hostilities in the war it was suggested from many sources that some permanent memorial should be established which should serve as a tribute to the memory of those who lost their lives in the service, as fitting recognition of

the creditable part which Stanford men and women took in all arms of the service, and to emphasize and perpetuate the ideals which animated the American nation in entering the war.

A local committee of fifty members under the chairmanship of John Maxson Stillman, emeritus professor of chemistry, consisting of alumni, students, faculty and other officers of the University, was organized to consider the desirability and practicability of some such memorial and eventually to propose a suitable form for such memorial.

After earnest consideration this committee decided that such a memorial should if possible serve some one or more of the many real needs of the University, and that a building could best combine service with the memorial motive.

Among these possibilities, the choice fell upon an auditorium midway in capacity between the Little Theater and the great Assembly Hall. Such an auditorium has been long recognized as a serious need in the development of the intellectual and social life of the University, affording opportunity for many University meetings, lectures, addresses, and other University functions for which the Little Theater is too small and the Assembly Hall unwieldy or poorly fitted.

This plan offered the advantages of serving the entire University community rather than a limited department or group; of associating with it a memorial entrance chamber which could fittingly express dedication of the building to service and sacrifice, while admitting of a style of architecture in harmony with its memorial character within an expense considered not too great to be readily attained. It seemed fitting that this building should be erected by means of the voluntary offerings of the whole Stanford community—students, graduates, former students, faculty, and friends. It was tentatively estimated that not less than \$150,000 will be required to erect a building suitable for its purpose, though a larger sum would be more adequate and architecturally worthy of its motive and the position it must occupy.

This plan suggested by the Committee of Fifty has been approved in its general plan by the Board of Trustees. To make the participation of students and graduates as easy as possible, the time for the completion of the fund was placed as late as the spring of 1923. The campaign for funds was inaugurated in

the spring of 1919, and has met with very encouraging reception, the subscription reaching, on December 31, 1919, over \$64,000, and the payments nearly \$14,000.

Considering that these amounts are from only about 1,200 of the 10,000 or more whom Stanford counts among her family, past and present, it may be assured that this Memorial Building, while satisfying a great and growing need, will be, as it should be, a notable and impressive feature on the campus, and a permanent monument and memorial of the ideals of service and sacrifice in the cause of humanity and justice.

FACULTY

War Service.—Aside from the instruction work given to the S. A. T. C., and the numerous lectures or other forms of public service in which practically all members of the faculty engaged, the following is a record of the services rendered by members of the Stanford faculty during the academic year under discussion in this report:

The President continued his work with the U. S. Food Administration as assistant to the Food Administrator and for three months served as Regional Director for the 11th District of the Students' Army Training Corps, including the States of California, Utah, Nevada, Arizona and New Mexico.

The following were engaged in national service, either during a part or the whole of the year, in this country or abroad:

- E. D. ADAMS, Professor of History, Lecturer, Camp Fremont, California; Writer—articles on England and America in this war. National Security League, New England.
- DR. THOMAS ADDIS, Associate Professor of Medicine, as Contract Surgeon, U. S. A.
- DR. H. E. ALDERSON, Associate Clinical Professor of Medicine, Special Lecturer for Department of Social Hygiene Instruction, U. S. Army and Navy.
- DR. HANS BARKAN, Assistant Clinical Professor of Surgery, as P. A. Surgeon, U. S. N.
- DR. GEORGE D. BARNETT, Assistant Clinical Professor of Medicine, as Assistant Surgeon, U. S. N., Naval Base Hospital No. 2, A. E. F.
- DR. SHADWORTH O. BEASLEY, Assistant Clinical Professor of Obstetrics and Gynecology, as Major, M. R. C., A. E. F.*
- JOSEPH W. BINGHAM, Professor of Law, Assistant Director of the Bureau of War Trade Intelligence, War Trade Board, Washington, D. C.
- HANS F. BLICHFELDT, Professor of Mathematics, Field Artillery, consulting work. Ordnance department. Range firing section, as Mathematician at Aberdeen Proving Ground, Md.

* Killed in action, October 14, 1918.

- DR. WALTER W. BOARDMAN, Associate Professor of Medicine, as P. A. Surgeon, U. S. N. R. F.
- HAROLD C. BROWN, Associate Professor of Philosophy, as Associate Field Director, A. R. C., Camp Fremont, California.
- DR. JOSEPH R. BROWN, Clinical Instructor in Obstetrics and Gynecology, as Lieutenant, M. R. C., Army, Camp Lewis, Washington.
- ELISABETH LEE BUCKINGHAM, Instructor in English, Women's Committee of War Work, Columbia University, New York.
- JENS BUGGE, Professor of Military Science and Tactics, as Colonel, U. S. A., A. E. F.
- L. L. BURLINGAME, Associate Professor of Botany, National Research Council, Data on Economic Plants.
- D. H. CAMPBELL, Professor of Botany, Committee on Botany, National Research Council, National Council of Defense.
- A. M. CATHCART, Professor of Law and Acting Dean of the Law School, Executive Committee, P. A. Branch of American League of California. Public lectures.
- DR. WILLIAM R. P. CLARK, Assistant Clinical Professor of Medicine, as Major, M. R. C., Army.
- G. H. CLEVINGER, Research Professor of Metallurgy, Metallurgist, U. S. Bureau of Mines in charge of precious metal investigations. War minerals in Colorado. Chairman, Section of Metallurgy of National Research Council, Washington, D. C. Also vice-chairman of Engineering Division.
- JOHN E. COOVER, Assistant Professor of Psychology, as Captain in the Sanitary Corps, U. S. Army.
- DR. JOHN F. COWAN, Associate Professor of Surgery, as P. A. Surgeon, U. S. N. R. F.
- C. N. CROSS, Assistant Professor Engineering Department, U. S. Fuel Administration.
- JOSEPH E. DE CAMP, Instructor in Psychology, in the Sanitary Corps, Camp Kearny, California.
- DR. ERNEST C. DICKSON, Associate Professor of Medicine, as Captain in Canadian M. R. C.
- TENNEY L. DAVIS, Instructor in Chemistry, as Lieutenant in the Chemical Warfare Service of the Ordnance Department of U. S. A., in France.
- RENNIE W. DOANE, Associate Professor of Entomology, Consulting Entomologist for Federal Food Administration in California.
- WILLIAM F. DURAND, Professor of Mechanical Engineering, as Scientific Attaché to the American Embassy in Paris.
- WILLIAM R. ECKART, Professor of Mechanical Engineering, member Palo Alto Committee, Military Training Camps Association of the United States (Examination of candidates, O. T. C.).
- WILFRED ELDRED, Instructor in Economics, with U. S. Food Administration and later with the U. S. Grain Corporation.
- DR. LEO ELOESSER, Associate Clinical Professor of Surgery, U. S. M. R. C.
- DR. LEONARD W. ELY, Associate Professor of Surgery, M. C., U. S. A.
- DR. HAROLD K. FABER, Associate Professor of Medicine, as First Lieutenant, M. R. C., Army.

- HENRY R. FAIRCLOUGH, Professor of Latin, with A. R. C., in Switzerland, also Lieutenant-Colonel, A. R. C., Montenegro.
- DAVID MORRILL FOLSOM, Professor of Mining, as Member of Petroleum Committee, California State Council of Defense. Chairman, Fuel Oil Board of California.
- BENJAMIN O. FOSTER, Associate Professor of Latin, with War Trade Board, Washington, D. C.
- EDWARD C. FRANKLIN, Professor of Organic Chemistry, as member of Advisory Committee of U. S. Bureau of Mines.
- VALENTINE R. GARFIAS, Associate Professor of Geology and Mining, as member of Fuel Conservation Board.
- FREDERIC B. GARVER, Assistant Professor of Economics, in the Tonnage Section of the U. S. Shipping Board.
- CHARLES H. GILBERT, Professor of Zoology, Bureau of Fisheries.
- DR. PHILIP K. GILMAN, Assistant Clinical Professor of Surgery, as Lieutenant, U. S. N., Naval Base Hospital, No. 2, A. E. F.
- DR. FRANK R. GIRARD, Assistant Clinical Professor of Obstetrics and Gynecology, as Captain, M. R. C., Army.
- DR. HARRINGTON B. GRAHAM, Assistant Clinical Professor of Surgery, as Lieutenant Commander, U. S. N. R. F.
- HOWARD J. HALL, Assistant Professor of English, in Y. M. C. A., overseas.
- NORRIS F. HALL, Instructor in Chemistry, as Captain in Chemical Warfare Service of A. E. F.
- HENRY H. HENLINE, Instructor in Electrical Engineering, Second Lieutenant, Field Artillery.
- DR. ALBION W. HEWLETT, Professor of Medicine, as Surgeon, U. S. N., Naval Base Hospital No. 2, A. E. F.
- FRANK E. HILL, Instructor in English, in Aviation, Kelly Field, San Antonio, Texas.
- DR. HAROLD P. HILL, Clinical Professor of Medicine, Lieutenant-Commander, U. S. N.
- ELIZABETH HOGUE, Superintendent of Nurses, Medical School, as Chief Nurse, Naval Base Hospital, No. 2, A. E. F.
- CHARLES A. HUSTON, Professor of Law, in administrative work with the Bureau of War Trade Intelligence, War Trade Board, Washington, D. C.
- DR. THOMAS G. INMAN, Assistant Clinical Professor of Medicine, as Assistant Surgeon, M. R. C., Navy.
- ELIOT JONES, Associate Professor of Economics, as fuel expert of the Central Statistical Bureau, Washington, D. C.
- VERNON L. KELLOGG, Professor of Entomology, with U. S. Food Administration, Washington, D. C.
- ERNESTO R. KNOLLIN, Instructor in Physical Training, Army.
- EDWARD KREHBIEL, Professor of History, Chief of Speakers' Division, U. S. Food Administration in California.
- DR. HARRY L. LANGNECKER, Clinical Instructor in Surgery, as Assistant Surgeon, U. S. N., Naval Base Hospital No. 2, A. E. F.
- THOMAS A. LARREMORE, Instructor in Law, Army.

- DR. CHARLES N. LEACH, Assistant in Medicine, A. R. C. Military Hospital No. 1, France.
- KARL E. LEIB, Instructor in English, U. S. N. R., San Pedro, California.
- MARGARET M. LOTHROP, Instructor in Economics, with Stanford Women's Unit, France.
- J. E. McDOWELL, Dean of Men, Adjutant Intercollegiate Intelligence Bureau.
- HARRY W. MALONEY, Instructor in Physical Training, Captain, U. S. Army, Athletic Director, Brest, France.
- ERNEST G. MARTIN, Professor of Physiology, as Captain in the Sanitary Corps, U. S. Army.
- ERNEST W. MARTIN, Associate Professor of Greek, as Captain, A. R. C., France and Greece.
- DR. F. M. MCFARLAND, Professor of Histology, State Council of Defense, Zoology Investigation.
- J. I. W. McMURPHY, Instructor in Botany, National Research Council. Data on economic plants.
- DR. L. MICHELSON, Instructor in Surgery, Head of Bureau of State Board of Health for Prevention of Communicable Diseases.
- EDITH R. MIRRIELES, Instructor in English, with Stanford Women's Unit, France.
- DR. CLELIA D. MOSHER, Assistant Professor of Personal Hygiene, A. R. C., under Dr. Lucas in Paris.
- DR. HARRY R. OLIVER, Assistant Clinical Professor of Medicine, as Major, M. R. C., Army.
- GEORGE J. PEIRCE, Professor of Botany and Plant Pathology, Chairman, Palo Alto Chapter, American Red Cross.
- NORRIS W. RAKESTRAW, Instructor in Chemistry in Chemical Warfare Service, Edgewood Arsenal, Md.
- DR. JAY M. READ, Clinical Instructor in Medicine, Army.
- DR. ALFRED C. REED, Clinical Instructor in Medicine, Assistant Surgeon, U. S. N. R. F.
- EDGAR E. ROBINSON, Associate Professor of History, as Assistant to Regional Director, S. A. T. C., 12th District.
- AUSTIN FLINT ROGERS, Associate Professor of Mineralogy, on the National Research Council.
- DR. GEORGE ROTHGANGER, Assistant Clinical Professor of Surgery, as Surgeon, U. S. N.
- HARRIS J. RYAN, Professor of Electrical Engineering in active charge of Pasadena Special Laboratory of the National Research Council, and also Chairman of the Council's San Pedro Anti-submarine Group Committee on Supersonics.
- DR. WALTER F. SCHALLER, Associate Clinical Professor of Medicine, as Assistant Surgeon, U. S. N. R. F.
- SAMUEL S. SEWARD, JR., Assistant Professor of English, 1st Lieutenant, U. S. A. A. S., No. 597, A. E. F.
- EVERETT W. SMITH, Assistant Professor of English, with the U. S. Food Administration in Washington, D. C., and the American Relief Administration in New York City, N. Y.

- DR. WILLIAM F. SNOW, Clinical Professor of Hygiene and Public Health, Lieutenant-Colonel, M. R. C., A. E. F.
- J. O. SNYDER, Associate Professor of Zoology, State Council of Defense, Zoology Investigation for California.
- DR. HENRY A. STEPHENSON, Assistant Professor of Obstetrics and Gynecology, as 1st Lieutenant, M. R. C., Army.
- WARREN P. STANFORD, Student Adviser, as 2d Lieutenant, U. S. Army, Siberia.
- EDWIN C. STARKS, Assistant Professor of Zoology, Member Committee on Zoological Investigations (Census of Fishery resources) under State Council of Defense.
- DR. BURT S. STEVENS, Clinical Instructor in Surgery, Army.
- DR. STANLEY STILLMAN, Professor of Surgery, in charge of Naval Base Hospital, No. 2, A. E. F.
- DR. HERBERT R. STOLZ, Assistant Professor of Physical Training, as Captain, M. C., 80th Division, A. E. F.
- JOHN S. P. TATLOCK, Professor of English Philology, as Assistant to Regional Director, S. A. T. C., 11th District.
- LEWIS M. TERMAN, Professor of Education, Major of Sanitary Division, U. S. A., in charge of psychological work, Washington, D. C.
- SIDNEY D. TOWNLEY, Professor of Applied Mathematics, Permanent chairman, Stanford University Branch, War Work Council.
- PAYSON, J. TREAT, Professor of History, Secretary, Stanford University Branch, War Work Council.
- DR. ROLAND B. TUPPER, Clinical Instructor in Medicine, as P. A. Surgeon, U. S. N. R. F.
- MURIEL VAIL, Instructor in Physical Training, A. R. C., France.
- LOUIS P. DeVRIES, Instructor in Romanic Languages, Army.
- VICTOR J. WEST, Associate Professor of Political Science, with Personnel Department of the War Risk Insurance, Bureau of Efficiency, Washington, D. C.
- MURRAY S. WILDMAN, Professor of Economics, with the War Export Board, Washington, D. C.
- BAILEY WILLIS, Professor of Geology, with Latin-American Division of the House Commission, Washington, D. C.
- CHARLES B. WING, Professor of Structural Engineering, as Colonel, 23d Engineers, A. E. F.
- DR. JULIAN M. WOLFSOHN, Assistant Clinical Professor of Medicine, as Major, M. R. C., A. E. F.
- DR. CHESTER H. WOOLSEY, Clinical Instructor in Surgery, Acting Assistant Surgeon, U. S. Public Health Service.

Absences.—Sabbatical leaves for the academic year 1919-20 have been granted to the following: Associate Professor Clara S. Stoltenberg, of the Anatomy department (two quarters); Associate Professor J. C. Clark, of the Electrical Engineering department; Assistant Professor H. J. Hall, of the English department; Associate Professor E. E. Robinson and Assistant

Professor Yamato Ichihashi, of the History department; Associate Professor Jefferson Elmore, of the Latin department (two quarters); Professor W. R. Eckart and Professor G. H. Marx (two quarters), of the Mechanical Engineering department; Assistant Professor F. W. Weymouth, of the Physiology department (two quarters); Assistant Professor C. D. Mosher, Roble Gymnasium.

Resignations.—The following resignations have been received and accepted: Professor Edward B. Krehbiel, of the Department of History; Professor D. M. Folsom, Associate Professor V. R. Garfias, and Assistant Professor H. W. Young, of the Department of Geology and Mining; Assistant Professor C. A. Knoch, of the Department of German; Instructors N. H. Furman, N. F. Hall, and T. L. Davis, of the Department of Chemistry; Assistant Professor F. B. Garver and Instructor Wilfred Eldred, of the Department of Economics; Assistant Professor J. H. Foss, of the Department of Civil Engineering; Instructor F. E. Hill, of the Department of English; Instructors G. H. Grojean and F. M. de Setién, of the Department of Romanic Languages; Dr. H. R. Stolz, director of Encina Gymnasium; Dr. E. W. Smith, instructor in Pathology at the Medical School; Instructor J. E. DeCamp, of the Department of Psychology.

Promotions.—The following promotions take effect with the beginning of the academic year 1919-20: Associate Professors Lee E. Bassett, in English; Cyrus F. Tolman, Jr., and Austin F. Rogers, in Geology; Everett P. Lesley, in Mechanical Engineering; Victor J. West, in Political Science, to full professorships; Assistant Professors Samuel S. Seward, Jr., in English; Percy A. Martin, in History; Waldemar F. Dietrich, in Mining; Frank E. Blaisdell, in Surgery, to the rank of associate professor; Instructors James I. W. McMurphy, in Botany; William M. Proctor and Chloe L. Starks, in education, to the rank of assistant professor.

New Appointments.—The following appointments take effect with the beginning of the academic year 1919-20: Mr. Warren D. Allen, formerly dean of the Conservatory of Music at the College of the Pacific, as University Organist; Mr. Theodore J. Hoover, as Professor of Mining and Metallurgy; Mr. James M. Hyde as Professor of Metallurgy; Dr. Edwin A. Cottrell as Professor of Political Science; Dr. Jean R. Oliver as Associate Professor of Pathology; Dr. A. D. Browne as Associate Professor

of Physical Training and Medical Adviser of Men, in charge of Encina Gymnasium; Mr. C. E. Blee as Assistant Professor of Civil Engineering; Mr. John B. Canning as Assistant Professor of Economics; Mr. Reginald G. Trotter as Assistant Professor of History; Mr. Carl H. Beal as Assistant Professor of Mining and Metallurgy; Dr. Gardner C. Bassett as Assistant Professor of Psychology; Miss Helen M. Bunting as Associate Director of Physical Training and Personal Hygiene for Women, in charge of Roble Gymnasium, and Dr. Ethel D. Owen as Medical Adviser of Women during Dr. Mosher's absence on sabbatical leave; Dr. Alonzo E. Taylor, Professor of Physiological Chemistry at the University of Pennsylvania, as Lane Medical Lecturer; Mr. Henry Osborn Taylor, of New York City, as West Memorial Lecturer. The following instructors have been appointed: Edwin W. Schultz, in Bacteriology; Emil Grebs, in Education, Division of Graphic Art, for the autumn quarter; Arthur L. Acker, in Physical Training, Encina Gymnasium; Warren P. Staniford, in Journalism; Frank M. Russell, in History; Eva M. Newnan, in Latin; George R. Harrison, in Physics; James P. Baumberger, in Physiology; Yolanda S. Allen, in Physical Training, Roble Gymnasium.

Summer Quarter Appointments.—The following were appointed for the summer quarter, 1919: Professor Edwin Greenlaw, of the University of North Carolina, and Professor Winifred Smith, of Vassar College, as Acting Professors of English; Dr. James Kendall, Associate Professor of Chemistry at Columbia University, as Acting Professor of Chemistry; Dr. Alfred Coester, of New York City, as Acting Assistant Professor of Spanish; Professor Frank H. Fowler as Acting Associate Professor of Latin; Mr. Rudolph Schaeffer as Instructor in Design, Division of Graphic Art, Department of Education.

Retirement.—With the close of the academic year 1918-19 Professor Fernando Sanford, head of the Department of Physics, retired on Carnegie Pension. Professor Sanford has been connected with the University since its opening in 1891.

Deaths.—The University community has been saddened by the loss of the following members of its staff: Dr. Shadworth O. Beasley, Assistant Clinical Professor of Obstetrics and Gynecology.

cology, killed in action in France, October 14, 1918; Mr. Louis H. Eaton, Organist, November 16, 1918; Associate Professor Henry L. Cannon, of the Department of History, January 5, 1919; Miss Lucia May Brooks, Chief of the Periodical Room of the University Library, January 7, 1919; and Dr. Morris E. Dailey, Lecturer in Education, July, 1919. I wish to record here the resolutions passed by the Academic Council in honor of Dr. Beasley, Mr. Eaton, and Professor Cannon.

Resolutions passed by the Academic Council January 3, 1919.

We, the Academic Council of the Leland Stanford Junior University, would record our tribute of respect to the memory of our colleague, Dr. Shadworth O. Beasley, recently killed in action on the Western Front.

Shadworth Oldham Beasley, Major Medical Corps, United States Army, Assistant Clinical Professor of Obstetrics and Gynecology in the Stanford University Medical School, was born in California in 1876, received his preliminary education in England, and his medical degree from the Cooper Medical College in San Francisco in 1897. In 1898, at the beginning of the Spanish-American War, he volunteered and rendered distinguished service with the United States forces in the Philippines. He was recommended for the Congressional Distinguished Service Medal, and was honorably discharged with the rank of Major and Surgeon in 1903.

Upon returning to California, he associated himself with the staff of Cooper Medical College and served in the Departments of Anatomy and Surgery. Since 1913 he had been a member of the Division of Obstetrics and Gynecology of the Stanford University Medical School.

Early in the World War just ended, he volunteered his services and was engaged with the Red Cross Commission in Serbia, heroically combating the typhus epidemic in Belgrade and the surrounding districts, until some time after the Austrian occupation of that country.

A few months after his return to San Francisco he volunteered in the Medical Reserve Corps of the United States Army, and was one of the first to be called into active service upon the entrance of this country into the war. His characteristic bravery and fidelity were officially recognized in his being again recommended for the Distinguished Service Medal a few days before he met his death while rescuing our wounded in the most advanced line of battle, October 4, 1918.

In this brief summary is recorded in barest outline a life unselfishly devoted to the service of humanity. Unmindful of personal danger, though keenly alive to its presence, he unhesitatingly followed the highest conception of a surgeon's duty wherever it might lead. He was an inspiring and sympathetic teacher, simple and modest in demeanor, ever loyal to the broadest ideals of scholarship. As colleague and friend he endeared himself to all those associated with him in medical instruction in this University.

His memory will be cherished among us. May the example of his too short life be a constant inspiration to higher things.

Louis H. Eaton, a man but slightly known to most of the members of this Council, has been taken away at an age when there seemed to be years of usefulness still before him. This strong, vigorous, manly man was a musician, a leader, a teacher. Like ourselves, he gave his message to a passing stream of persons, many of whom heard him but once, some of whom he met twice a week for a single quarter or for longer, and upon whom he had to make his impression then if ever. He was an organist of unusual taste and scholarly knowledge. As organist he played to many, suggesting to them the wealth and beauty of musical literature played in the manly way in which he lived. He never confused sentiment and sentimentality. Taxing as his brief but daily recitals were, he found time and energy to prepare and to conduct one great work each year, an oratorio, which he gave with a force and finish surprising, when one considers the brevity of training and the variety of endowment of the soloists and of the members of the choruses. He thus established standards, as choir-master, organist, and conductor, higher than those to which most of our students were accustomed; he opened doors of instruction and enjoyment which before were closed, if not unknown; and he lived the sane, sober, and upright life of the scholar and the idealist. Genial and lovable, he was at the same time strict with himself and with the members of his choir. His influence was fine, elevating, broadening. He will be long remembered as a friend, fellow student, and fellow teacher.

Resolution passed by the Academic Council June 13, 1919: ✓

Henry Lewin Cannon, Associate Professor of English History, died of pneumonia following an attack of influenza, on January 5th.

Born in Ohio and educated at Western Reserve, Harvard, Yale, and the University of Pennsylvania, Professor Cannon began his career as a university teacher in Cincinnati in 1900. Three years later he was called to Stanford, where as instructor, assistant professor, and associate professor of English history he exerted a considerable influence over several generations of Stanford students, being particularly successful in the training of graduate students, to whom he was able to impart some share of his own enthusiasm.

Professor Cannon had published a number of articles in the *American Historical Review*, the *English Historical Review*, and other journals, and was the author of a book on *Reading References upon English History*. His most important contribution to his chosen subject was an edition of a *Pipe Roll of Henry III*, which has just been issued by the University Press of Oxford and Yale, with the support of the British Pipe Roll Society, and constitutes a monument of laborious research. When death came to him he had also completed the first five chapters of a *History of England* which an American publisher had recently invited him to prepare for use as a college text-book.

Lewin Cannon was a tireless worker, despite the physical handicap

of a weakness of the heart which he endured without complaint and with no relaxation of his scholarly activity. To his many friends in this Faculty he was perhaps most endeared by his quick sympathy, his buoyant spirit, and his merry wit—qualities which made him at all times one of the brightest and cheeriest of companions. In his untimely death Stanford University has sustained a loss which it could ill afford.

CAMP FREMONT

Camp Fremont, which was in part established upon University property, was gradually abandoned following the Armistice, thus releasing a considerable portion of the Palo Alto Farm. Adjustments for rentals have been made with the War Department and the property under lease has been turned back practically in its original condition.

NEW DEPARTMENTS

During the year arrangements were completed for the separation from the Department of Geology and Mining of the new Department of Mining and Metallurgy, to be placed in the charge of Professor Theodore Jesse Hoover, Stanford, 1901. The scope of this department is as follows: A two-years graduate course leading to the degree of Engineer (of Mines). Candidates for admission will be largely trained in the departments of Geology, Chemistry, Engineering, etc., and such candidates will present as qualifications for admission the degree of A. B. from Stanford, or its equivalent from some other institution.

A similar arrangement has been made in regard to the Department of Economics and Political Science for the establishment of a Department of Political Science, with Professor Victor J. West as executive head.

NEEDS OF THE UNIVERSITY AND FINANCIAL REARRANGEMENTS

Permit me to call particular attention to the existing needs of the University.

Stanford University has reached a crisis in its development. Pictured for years in the popular mind as one of the richest universities in the world, it finds its further development handicapped by an income that is definitely limited at a level far below that of many other universities. The rise in general living costs

has still further diminished this income because of its lowered purchasing power.

This year is notable in that during it a large proportion of the outside lands owned by the University have been sold. This includes not only a proportion of the Pacific Improvement Company's properties, including the Hope Ranch, Ione Ranch, and the Del Monte Hotel properties, but also certain water-front lands in Alameda county, the Calistoga Springs property, and the Vina and Durham ranches. The total amount derived from these various sales was approximately \$3,500,000.

The long experience of the Board of Trustees in an endeavor to handle large ranch properties demonstrated the wisdom of taking advantage of the favorable conditions for sale. It is a most fortunate circumstance for the University, not only that the ranches were more profitable than usual during the last two years because of the war demands and prices, but that these ranches could be turned into productive investments. Otherwise, with the increases in general costs in every direction, the University would have been most seriously handicapped.

There is no prospect from within of the University meeting its growing needs and responsibilities. Not to grow is in part to die. We can fill well a gradually narrowing field or we can gain public and alumni support and keep fully abreast of the best.

The present income is approximately \$1,200,000, made up of about \$1,000,000 from bonds, stocks, and loans, \$50,000 from miscellaneous accounts, and \$150,000 from endowments for special purposes, laboratory and incidental fees. This can only be increased by obtaining investments paying larger rates of interest, by increased rentals from the Palo Alto Farm, by requiring a tuition fee of all students, or by new endowment funds or income. There is some opportunity to rearrange the expenses within the present income, so as to bring about certain savings and to deflect expenditures from one direction to another.

For some years a recognition of the limitations of the University's income has been of marked influence on its progress. Since the time when the field of agriculture was abandoned to the University of California, it has been clear that until the Stanford Trust could be depersonalized by time, its field must be a

limited one. We now see the new era at hand when the whole problem of Stanford becomes a public one, and when its future depends upon its Alumni, its friends and on those interested in endowed educational institutions independent of state support.

The fixed policy of the Board of Trustees from the first has been to administer the University funds so that there would be no deficits. This has given Stanford an air of prosperity and of self-maintenance different from that of many educational institutions which are constantly asking help to meet past expenditures.

It has been the consistent aim of Stanford to do its chosen work well, so that certain limitations imposed both by buildings, equipment, and income have been adopted, such as:

- (1) The limitation of the total registration of women to 500.
- (2) The limitation of the admission of new men with less than one and a half years of University standing to 500 per year.
- (3) The limitation of the upper classes in the Medical School to twenty-five each.
- (4) Other class limitations due to the size of laboratories or the inadequate number of instructors.
- (5) The proposed elimination of the first two college years, or its self-support made possible by tuition fees.

It is evident that within a few years there will be from 20,000 to 50,000 students of college grade in California, so that it is inevitable that Stanford can handle but a small proportion of them. Stanford can and should select certain lines of University work and develop them to the maximum.

Senator Stanford emphasized the importance of paying large enough salaries to secure the best available instructors. The vicissitudes in the early history of the University brought about many sacrifices on the part of its loyal faculty. A few years ago the following scale of salaries was adopted:

Professors	\$3,500 to \$6,000
Associate Professors.....	\$2,750 to \$3,250
Assistant Professors	\$2,000 to \$2,500
Instructors	\$1,200 to \$1,800

All members of the Faculty are now receiving at least the minimum salary of their rank and in most instances something above

that amount. Nevertheless, these salaries are gauged too low to meet the existing living needs of our staff. An increase is a pressing necessity.

The following list indicates the most important present needs of the University in order that it may continue to occupy its high position in education and continue to render the service which it has so well begun:

1. An increase in the salary roll of the University of approximately \$200,000, so as to increase the salaries of the instructors to a level where the best men may be obtained and retained as they develop in the service of the University. This will only permit of the moderate scale of living appropriate to academic conditions.

2. Development of an adequate water supply for campus and Palo Alto Farm, with erection of a new dam estimated at \$300,000 to \$500,000.

3. New buildings (assuming the completion of the plan for a Memorial Hall containing an auditorium we need):

- (a) New dormitories for men for the accommodation of at least 5 units of 100 each, at a cost of approximately \$150,000 per unit.

- (b) New dormitories for women, 2 units of 100 each, at a cost of \$150,000 per unit.

- (c) Dining Hall facilities for 1,000 students, with suitable endowment to meet necessary deficits, \$500,000 to \$750,000.

- (d) Nurses' Home in connection with the Lane and Stanford Hospitals for the adequate housing of the Stanford School for Nurses, \$300,000.

- (e) Completion of Women's Gymnasium, \$200,000.

- (f) New Law Building, \$150,000 to \$200,000.

- (g) New Mining Building, \$200,000.

- (h) New Building for housing of Anatomy, Physiology, and Bacteriology, \$250,000.

- (i) A Greek Theater, \$150,000.

- (j) An Outdoor Amphitheater for athletic sports, \$100,000 to \$250,000.

- (k) A new Laboratory for Physical Chemistry and Industrial Chemistry, \$200,000.

- (l) Student Hospital on the campus, with suitable endowment, \$100,000 to \$250,000.

(m) Convalescent Home for Children in connection with the Stanford Clinics, with suitable endowment, \$100,000 to \$250,000.

(n) Woman's Hospital in San Francisco in association with the Medical School, with endowment, \$250,000 to \$1,000,000.

(o) Hospital for Children in San Francisco in connection with the Medical School, with suitable endowment, \$250,000 to \$1,000,000.

(p) Orthopedic Hospital in San Francisco in connection with the Medical School, with suitable endowment, \$250,000 to \$1,000,000.

(q) Psychopathic Hospital in San Francisco in connection with the Medical School, with suitable endowment, \$100,000 to \$750,000.

4. Research. Sums in any amount for any of the departments of the University can be used to great advantage in facilitating research, either in the form of funds for fellowships or for equipment and expenses. In particular the following needs are pressing:

(a) Industrial Chemistry, \$20,000 per year.

(b) Bacteriology, \$1,000 to \$20,000 per year.

(c) Other Medical Research, \$1,000 to \$50,000 per year.

(d) Mining Engineering and Metallurgy, \$1,000 to \$30,000 per year.

(e) Aviation Engineering, \$1,000 to \$30,000 per year.

(f) Marine Engineering, \$1,000 to \$30,000 per year.

(g) Metabolism Laboratory, \$10,000 to \$30,000 per year.

5. Scholarships and Fellowships. A large number of both undergraduate and graduate scholarships and fellowships, and traveling fellowships, varying in amount from \$250 to \$1,000 per year, are urgently needed in every department of the University.

6. Endowment for Free Beds in the University Hospital is one of the most urgent needs of the University. The total amount should exceed \$1,000,000, but the income of any sum can be used to great advantage for this purpose.

7. Special Departmental Enlargements, which Stanford can readily meet because of the personnel of its Faculty and which can only be made possible by additional endowment or income:

(a) Marine Engineering, income of \$10,000 to \$30,000 per year.

(b) Aviation Engineering, \$10,000 to \$30,000 per year.

(c) The development of the Hygiene Division of the Medical School, \$10,000 to \$25,000 per year.

(d) Development of the Educational Laboratory for special mental tests, \$10,000 to \$20,000 per year.

(e) Instruction in Oriental and Slavic Languages, \$5,000 to \$15,000 per year.

8. Library. Sums in any amount or books along any line are desirable for the Stanford Library and the Lane Medical Library in San Francisco. Gifts can best take the form of endowment funds either for general library purposes or for the development of libraries along special lines.

9. A large separate endowment for the instruction of additional women students beyond the 500 limit now set by the University. Amount, \$2,000,000 to \$5,000,000.

10. Lectureships. A considerable number of lectureships along special lines are desirable. They require an annual income of \$250 to \$2,000 each, and can be advantageously used by the University in almost any line of thought and science.

11. An endowment for the University Press, permitting of University publications, \$5,000 to \$100,000 per year.

12. Arboretum. There are unusual opportunities for the development of an Arboretum that can be made of world service as well as world famous. Income of \$1,000 to \$20,000 would be required.

13. Scientific and Other Collections. Funds are needed so that expeditions may be sent to different parts of the world for the collection of specimens required for scientific study along various lines, particularly in Botany, Zoology, and Geology. Any sum from \$500 to \$10,000 per year can be used.

14. Endowment for the School of Journalism that will yield an income of \$5,000 to \$20,000 per year.

15. For Social Service Work in connection with the Stanford

Clinics any sum can be used to advantage. There should be available at least \$10,000 per year. This work is now being supported by the Auxiliary to the Stanford Clinics. Subscriptions can be made directly to it through the Treasurer.

16. Additional endowment for the uses of special schools or for special professorships are desirable, particularly for the Schools of Medicine, Law, and Education.

17. Cement floor for Lake Lagunita. If it is found to be practicable, the bottom of the lake on the University grounds could be made impervious, and this would make it possible for the lake to be kept full of water throughout much of the year and add greatly to the pleasure and health of the students, \$30,000 to \$50,000.

The above items are all associated with the needs of existing departments or are to meet the needs of students and faculty as they now exist. The University can only broaden its scope by taking up new lines of work if separate endowment is given for such purposes. For instance, development of such subjects as Architecture, Archaeology, Landscape Gardening, and other new departments can only be made possible in this way. Practically all of the above suggestions would permit Stanford University to meet its existing obligations to students and to education in the very best way and would not enlarge greatly the scope of the institution as it exists today.

Stanford University will go ahead making full use of all of its resources. The work that it does do will be done well. Some changes are inevitable. Growth at the top is imperative; but this must be upon sound foundations laid by the students either at Stanford or elsewhere.

The Alumni, Faculty, and Students of Stanford form its great holding body for the public. The Trustees are the immediate custodians for them of the trust. It belongs to us. All must show a sense of ownership by help of all sorts—best of all by a good word everywhere, that costs nothing and goes far. Those members of the great Stanford family that can will soon do more. We can look ahead hopefully to new days with the determination to produce more of the Stanford type of men and women—that was brought into such clear and noble outlines by the fires of war.

DEVELOPMENT COMMITTEE

Upon January 31, 1919, a Special University Development Committee was appointed by the Board under the following resolution and with the following personnel:

WHEREAS, It is considered wise that a study be made of the financial plan of operation of the University, and a study of the development plan of the University;

THEREFORE, BE IT RESOLVED, That a committee of five members of the Board of Trustees be appointed by the President of the Board whose duties shall be:

FIRST. The employment of a chartered accountant for the auditing of the accounts of the University up to the closing of the fiscal year ending September 1, 1918.

SECOND. The presentation to the Finance Committee of a financial plan of operation for its consideration.

THIRD. The presentation to the Board of Trustees of a plan of University development for its consideration.

AND FURTHER, BE IT RESOLVED, That the committee, in co-operation with the President of the Board of Trustees, be empowered to employ such advice as it may deem necessary in the preparation of the plans.

Members: Trustees Bourn, Eells, Stow, Hopkins, and Sloss.

This committee after a thorough study of the business arrangements of the University and upon the advice of Klink, Bean and Company, made recommendations for future management of the University, which have already led to the following primary changes:

1. A segregation is being made between the educational plant—which includes the campus with its buildings and other equipment, both at Palo Alto and at the Medical School in San Francisco—and the investment accounts of the University. The University plant is to be under the general charge of the President of the University. The active business management at the University is placed in the hands of a Comptroller to be appointed by the Board of Trustees, who will work under a definite budget presented and ratified by the Board of Trustees at the same time that the President's budget is adopted.

2. The establishment of a Treasurer's Office in San Francisco to handle the investments accounts, the removal of the former Business Manager's office to that of the Comptroller upon the Stanford campus.

3. The amalgamation of the offices of the President, Registrar, and Comptroller in a single building.

RESEARCH

The University is doing creditable work in its departments and professional schools. In a number of instances high-grade original studies are being made. There is a very marked lack of equipment and of funds for research purposes. Stanford University has now developed to a point where it must make productive scholarship a primary aim. This will necessitate the diversion of considerable funds either from University resources as they stand or from gifts to the various departments for the specific purposes of research.

WATER SUPPLY

The one large undeveloped asset of the University is the Palo Alto Farm, which consists of 9,000 acres. About 1,000 acres have now been set aside as a University campus. The further development of the rest depends upon an adequate water supply. The University is fortunate in having two dams—one at Searsville Lake, and one at Felt Lake—both on University property. During the year land has been purchased from the Spring Valley Water Company below the existing Searsville Reservoir, so that a large dam can be constructed in the future about three-quarters of a mile below Searsville Lake, which can lead to the impounding of a water supply sufficient to irrigate a considerable portion of the Palo Alto Farm. With the development of sufficient water there is the opportunity to lease villa sites on the property of the University as well as to use the flat lands for intensive agricultural production. It is also possible to increase the height of the Searsville and Felt Lake dams, thus enlarging considerably their storage capacity. An excellent grade of domestic water is obtained from the wells on the campus.

STUDENTS

ATTENDANCE

The total enrolment for the year was 2264, including summer registration, 361 more than in 1917-18. By major departments these were distributed as follows:

Anatomy	1	
Bacteriology and Experimental Pathology.....	23	
Botany	23	
Chemistry	220	
Economics	466	
Education, School of	25	} 148
Division of	74	
Graphic Art	49	
Engineering, Civil	91	
Electrical	2	
Mechanical	235	
English	211	
Entomology	12	
Geology and Mining	124	
Germanic Languages	14	
Greek	4	
History	128	
Latin	18	
Law, Professional	130	} 154
Pre-Legal	24	
Mathematics	40	
Medicine	97	
Philosophy	11	
Physics	8	
Physiology	69	
Pre-Nursing	4	
Psychology	10	
Romanic Languages	118	
Zoology	33	
Total	2,264	

LIMITATION OF STUDENTS

With the return to normal conditions following the war it is anticipated that the limitations on the numbers of students which have been adopted because of necessity will lead to many difficulties in administration. The limitation of the registration of women to five hundred leads each year to many disappointments and misunderstandings. A similar result will no doubt follow with the annual limitation to five hundred of the men with less than a year and a half collegiate standing. In the hope that some solution may be found that will bring about conditions favoring the entrance to the University of those coming primarily because of the desire to do scholarly work, a re-study of the whole question of these limitations has been asked by the President of the faculty committees concerned.

WELFARE OF STUDENTS

Senator Stanford in constructing the first buildings for the University planned to house and care for all of the entering students. Encina Hall was largely constructed by day labor under his special supervision and on the pattern of a building in Switzerland which had particularly attracted his attention. Roble Hall, now Sequoia Hall, was hurriedly built of reinforced concrete to prepare for the women who were seeking admission. Because of the time required, the foundations laid for a larger building—similar to Encina Hall—were temporarily abandoned, and have never been used. The influx of students was greater than expected and because of the early death of the Senator, with the subsequent financial difficulties, the growth of dormitories did not keep pace with the enlarging student body. Nevertheless the foundation principle of Senator Stanford was and still is sound: i. e., all students should be housed and fed in suitable buildings owned and controlled by the University. In so far as circumstances have compelled departure from this plan have we developed problems associated with the physical well-being and conduct of our students. I wish to urge upon you the responsibility of the University to see that additional dormitories and dining halls are supplied as promptly as possible. With a student body limited in numbers there is every reason to provide such facilities for all who enter, so that the most favorable conditions for the growth of a loyal, democratic and closely knit student group may prevail.

The growth of the fraternity house system upon the campus has been the inevitable result of the failure or inability of the University to meet the housing needs of the students. Independent groups with national affiliations occupying houses owned by them upon University property and carrying out a function properly belonging to the University naturally do not merge into the full life of the University. Stanford is not unique in this respect, but it has a greater opportunity than most other institutions to meet this problem on its merits and not continue to deal with it on the basis of the past, which has been largely that of expediency. The right of students to organize along lines of natural choice and cleavage is not a part of the question, which is the carrying on by them of a housing function properly belonging to the University. It is probably inevitable that secret fraterni-

ties will continue to exist in human society, and if they are conducted at Stanford so as to be consistent with the Founding Grant, which specifies:

The University has been endowed with a view of offering instruction free, or nearly free, that it may resist the tendency to the stratification of society, by keeping open an avenue whereby the deserving and exceptional may rise through their own efforts from the lowest to the highest stations of life. A spirit of equality must accordingly be maintained within the University. To this end it shall be the duty of the University authorities to prohibit excessive expenditures and other excesses on the part of students, and the formation or growth of any organization, custom, or social function that tends to the development of exclusive or undemocratic castes within the University, and to exclude from the institution anyone whose conduct is inconsistent with the spirit of the foundation.

there need be no occasion to interfere with them.

Certain steps have been taken by the Board of Trustees toward a settlement of the housing question which has gradually reached its present untenable position.

Under date of April 26, 1907, the following resolution was passed by the Board of Trustees:

Resolved, That it is the sense of the Committee on Student Affairs that the promiscuous mingling of fraternity and sorority houses on the University campus is not for the best interest of the University community, and that it is desirable, where possible, in the assignment of building sites in the new subdivisions, that close proximity of fraternity and sorority houses should be avoided; and that it is especially undesirable that any sorority should be located at a relatively remote point in the campus community with only fraternities for immediate neighbors.

With the construction of the first units of the new Roble Hall, capable of housing nearly one-half of the University women on a part of the campus near Lagunita and adjacent to the women's gymnasium and swimming pool and to the projected athletic grounds for women, the chance to clear up the whole situation, as far as the women are concerned, is evident. The completion of these dormitory facilities will permit the housing in University buildings of all of those women students not living at home. The existing sorority houses can then be purchased under the resolution of the Board under date of March 28, 1919, to wit:

Resolved, That the Board of Trustees purchase such fraternity and sorority houses at the University as may be offered to it at properly ap-

praised valuation, but do not and will not assume any financial obligations of any fraternity or sorority; that any agreements to permit building or leasing sorority or fraternity houses be accompanied by such restrictions as to conditions under which they shall be operated as may be recommended by the President of the University, and approved by this Board; that pursuant to recommendation presented by the President of the University, any agreement hereafter made for the building or leasing of houses for fraternity or sorority purposes contain a clause that suitable quarters be provided for a matron therein, and that each fraternity or sorority shall employ, and continue to employ, a matron satisfactory to the University authorities, said matron to live in the house; and further resolved, that any houses hereafter built by fraternities or sororities in accordance with this resolution shall revert at the expiration or sooner termination of the lease-hold to the University without cost.

If this is done the women will be well cared for on a University basis, and additional University buildings will be available for the men.

As rapidly as possible the buildings for men should be grouped together in the area bounded by Alvarado, Lasuen, and Arguello Streets, or about the eastern Quadrangle and Encina Hall. Enlarged dining facilities, both for large groups and possibly for dining clubs, should be constructed in this area, preferably near the Stanford Union. This will give a solidarity to the men of the student body that is impossible now with the scattered groups in existence.

I would urge also that for the most part the houses of the professors be built outside of the area specified and that the original cottages in this area be not replaced as they deteriorate.

It will take time to work out this plan; but it is important that every step taken should lead towards the final solution. All student rooms should be properly lighted, ventilated and heated, and expert supervision should be provided for all dining halls. These latter can not be conducted properly at profit.

INCIDENTAL FEES

Under date of December 27, 1918, the Board of Trustees approved the addition of the following paragraph to the minute of the Board of August 1, 1918, regarding the collection of the incidental fee of \$18 per quarter:

In addition, each undergraduate student registering in the University must pay a fee of \$2.00 per quarter for membership in the Associated Students of the University, the sum so received to be placed to the credit of the Board of Athletic Control and disbursed only according to a plan approved by the President of the University and the University Auditor.

STUDENT CONDUCT

There was a general let-down in student conduct following the disbanding of the S. A. T. C., which culminated in a Washington's Birthday fraternity parade of unsavory character, and which was also manifested by considerable abuse of the Freshman class. As a result of conferences with the students an inter-fraternity organization was completed which can be most effective if maintained at the high level of its inauguration. Under date of March 8, 1919, the following statement was sent to the President:

Stanford University, Cal., March 8, 1919.

To the President:

RESOLVED: That the undersigned fraternities in full agreement—

1. Will pledge no freshman prior to one day after registration of the quarter following his matriculation; and
2. Will initiate no freshman until he has completed at least two quarters of work at this University, except that freshmen matriculating for the winter quarter may be pledged and initiated the spring quarter; and
3. Will abolish freshman discipline in our respective fraternity houses; and
4. Will initiate no man into a fraternity until he has made an average grade of C for one quarter.

ALPHA DELTA PHI, C. S. Teitsworth.
 ALPHA SIGMA PHI, Wm. C. Fundenberg.
 ALPHA TAU OMEGA, W. K. Esgen.
 BETA THETA PI, C. W. Doe, Jr.
 CHI PSI, C. B. Cowan.
 DELTA CHI, W. E. Redwine.
 DELTA KAPPA EPSILON, C. S. Long.
 DELTA UPSILON, E. S. Winham.
 DELTA TAU DELTA, James M. Holt.
 PHI DELTA THETA, S. B. Hayes.
 PHI KAPPA SIGMA, L. C. Rogers.
 PHI GAMMA DELTA.
 PHI KAPPA PSI, Arthur L. Hutchinson.
 KAPPA SIGMA, Herman D. DeMund.
 KAPPA ALPHA, L. C. Pardee.
 SIGMA CHI, Hal Blote.
 THETA DELTA CHI, Clarence L. Hunter.
 THETA XI, J. A. Watts.
 ZETA PSI, Allyn H. Barber.

Likewise the men of Encina Hall sent the following to the President under date of June 5, 1919:

Encina Club, Stanford University, June 5, 1919.

Dr. Ray Lyman Wilbur:

Dear Sir:

The members of Encina Club are sending this communication to you to let you know that they desire to co-operate fully with the University's plan of welcoming the incoming freshmen and to assist them as much as possible so that they will come to feel that their presence and their activity in University affairs is a strong factor in helping to keep alive the Stanford spirit.

The upperclassmen of Encina Club feel that a large number of them lost touch with the freshmen during the past year. The chief reason for what has appeared to be a lack of interest is the fact that a large number of men have been returning from war service and on account of having lost so much time have been paying strict attention to their work and have not watched the freshman interests as they should have done. The men of Encina wish it to be known that freshman discipline has been completely abolished. At the smoker given by the Club Tuesday evening, which was attended by practically all of the members residing there, talks were given by several of the men on this subject. The matter was put squarely before the club, and the men are very favorable towards the plan. We believe that by welcoming the incoming freshman class and showing them that we are going to help them along as much as possible that a spirit of coöperation will soon be developed to form a very compact body of men in Encina Hall. Next year we plan to hold a number of smokers and meetings which will do a great deal towards fostering this spirit. The expressions in this communication are not the opinions of just the men signed below, but express the feeling that is spreading over the whole hall. We trust that you will approve of our efforts along these lines, since we believe that we have a spirit started that will make Encina Club attractive to a freshman and make him glad that he lives here.

We believe that you will be glad to consider any recommendations we might make that would help to keep the affairs of the Club running smoothly. It has been the custom in the past years to have the freshmen put part of their time each day on phone duty. This plan has been exceedingly unsatisfactory for obvious reasons. We wish to recommend that the University take charge of the phones and place phones on each floor or every other floor, with men in charge keeping a card index system. We have already been informed that the University is going to better the lavatory conditions.

Encina Club appreciates the improvements that have been made in the hall during the last year, and as new conditions arise we will submit recommendations to you for your consideration.

Respectfully submitted.

(Signed) C. E. RIGHTER
E. W. MASTERS
C. W. GIBBS
W. F. MARTIN
STIRLING PILLSBURY
WADE M. STAMP
W. I. AMES
CHEVER KELLOGG.

The average college generation of four years is so short, and there is such a large turnover each year with the graduation of one class and the entrance of another that it is difficult to get a continuity in the student life of the University. Nevertheless there is a constant and justified desire on the part of the thinking students for student control of student conduct. There is no reason why a student group should not be self-governing under good and wise leadership. The body of University regulations has the same relation to them that the Constitution of the United States and of the State and the existing code has to the ordinary community. Administration is the principal part of the problem, with some legislation as new conditions arise. It is hoped that the students will be willing to take the responsibility of maintaining student conduct in accordance with the best ideals of the University, for thereby they will derive a large measure of real training for citizenship.

If the full membership of the Senior Class, which is best fitted by experience, would assume leadership in holding up standards the difficulty would be largely solved. The most important phase of student control—that of prevention—is often overlooked because of the more apparent disciplinary side. The great advantage of senior participation in student government is that a senior is almost invariably present in every living group and in every center where trouble is apt to generate. A few words of caution, holding up Stanford ideals to view, will almost invariably prevent subsequent trouble and perhaps disgrace.

✓ The University reluctantly enters upon all disciplinary procedures. Rules and regulations are always a temptation to young

people with initiative. Practically all students desire to do that which is deemed fitting and appropriate by their fellows. The Senior Class that will assume the responsibility for student conduct and pass it on as a tradition to the Juniors will render the greatest of service to Stanford.

UNION CENTRAL ACCOUNTING OFFICE

During the year an organization known as the Union Central Accounting Office was perfected and is working well. The following notice was sent out to all organizations by the President:

Office of the President,

Stanford University, California, September 22, 1919.

To the Officers of Student Organizations:

Kindly note the following plan for handling the finances of student organizations:

On April 4, 1918, the following letter was sent to the officers of all student organizations:

"Dear Sir:

"Because of the constant confusion in student affairs due to the changes brought about by the war, and the inevitable fact that this will continue, I wish to call your attention to the attached plan for the financial operation of student organizations, to be adopted for the duration of the war and until further notice. I see no other way in which the good name of the University and its students can be protected. I shall be glad to get any suggestions that may occur to you.

"Please see that the financial status of your organization is promptly reported to the Union Central Accounting Office, and that your accounts are kept in accordance with its rules.

"PLAN FOR THE FINANCIAL OPERATION OF STUDENT ORGANIZATIONS

"All student organizations receiving subscriptions, assessments, donations, or other funds, with the exception of living groups and of clubs or societies whose income is less than \$50.00 per year, shall conform to the following rules:

"1. The collection of all income shall be reported to the Union Central Accounting Office on forms and under rules formulated by that office.

"2. All income of these organizations shall be deposited in a bank by their respective treasurers, as directed by the Union Central Accounting Office, and subject to check signed by the treasurer of the organization and countersigned by a representative of the Accounting Office.

"3. The treasurers of the organizations shall keep uniform records as directed by the Union Central Accounting Office, and shall satisfy that office that they have received proper authorization from their organizations covering the expenditures.

"4. The cost of this service on the part of the Union Central Accounting Office shall be covered by charges against these organizations proportional to the service which they receive."

This communication was sent for the following reasons:

1. Students are entitled to full knowledge of all financial dealings of student organizations.
2. Publicity of finances is the best cure for bad financing, loose methods, and temptations to learn bad citizenship through forms of petty graft or concealment of expenses.
3. The only safeguard in a student body with its rapidly changing personnel against debts, failure of student enterprises, etc., is a full knowledge of all financial activities.

Supplementary to the present plan the following will go into effect beginning with the fall quarter of 1919:

All student organizations as above outlined are required to deposit all their receipts in a fund to be known as the Students' Organizations Fund, together with an itemized statement showing the sources of such receipts. This fund will be in the care of a member of the University staff. The treasurers of students' organizations may draw checks against their deposits which will be valid only when countersigned by the member of the University staff, who must be satisfied that all expenditures are properly authorized by the respective organizations.

It will be the aim of the representative of the University staff to see that all expenditures are properly authorized by the respective organizations, but he will not in any way dictate the amount or the purpose of an expenditure.

It is planned to give publicity of the accounts to all organizations one or more times per year.

SCHOLARSHIP

There has been a steady improvement in student scholarship since the inauguration of the four-quarter system. There is still a diversity in the quality of the work associated with the place of residence. As a whole, the fraternity groups fail to meet the scholarship standards of those living in the dormitories and elsewhere.

The scholarship funds of the University have been administered by the Committee on Scholarship upon the principle of granting the scholarships to the applicants that presented the best records rather than the greatest need.

BOARD OF ATHLETIC CONTROL

The active management of the athletic affairs of the University by the Board of Athletic Control has been most satisfactory. In spite of the difficulties associated with the war period, the finances of the Encina Gymnasium and of the athletic sports have been kept on a sound basis. During the year the President took up with President Wheeler of the University of California the question of resuming intercollegiate relations in football. After considerable correspondence and discussion a resumption of complete and normal athletic relationships with the University of California was established.

In association with the gymnasium and the swimming pool there is being developed a system of fields and other opportunities for general athletics for men that is superior. As time goes by it will be necessary to replace the existing bleachers about the football field with some permanent form of construction. Efforts are already being made to start a Stadium Fund, to which gifts may be made and certain percentages of receipts automatically accrue. Within a reasonable number of years a sufficient sum to warrant construction should be obtained.

GIFTS

We are fortunate to be able to record a considerable number of valuable gifts and donations, a list of which is given under a separate heading. It is my privilege to make grateful acknowledgment to all the donors.

The department and other special reports follow.

Respectfully submitted,

RAY LYMAN WILBUR,
President.

December 31, 1919.

TREASURER'S BALANCE SHEET, AUGUST 31, 1919

ASSETS

GENERAL ENDOWMENT INVESTMENTS:

Bonds	\$18,787,138.89	
U. S. Certificates of Indebtedness	50,000.00	
Stocks	60,501.00	
Real Estate and Improvements	1,128,398.59	
Mortgages	1,722,838.80	
Notes Receivable	11,512.24	
Jewels	6,792.50	
Cash Uninvested	309,182.32	
* Building Fund Loan	593,233.87	
Contracts of Sale—Ranches	1,884,163.62	
		\$24,553,761.83

EDUCATIONAL PLANT—INCOME SECTION:

Mortgages and Loans		72,101.33
Cottages—Original Cost	\$325,196.03	
Less: Depreciation	65,618.93	259,577.10
Dormitories—Original Cost	1,010,258.74	
Less: Charged to Educational Plant, etc.	710,258.74	300,000.00
Utilities—Original Cost	467,118.55	
Less: Charged to Educational Plant, etc.	324,380.96	142,737.59
Subdivision Improvements		65,243.13
Stanford Hospital		587,224.69
		1,426,883.84

EDUCATIONAL PLANT AND EQUIPMENT:

Gifts of Founders—		
Buildings, Roads, etc.	3,504,010.49	
Campus Ground	200,000.00	
Medical School—San Francisco	356,051.64	
T. W. Stanford Art Gallery	89,305.91	
Radium	12,000.00	
Total Original Value		4,161,368.04
Additions to Plant		3,892,379.85
Total Educational Plant and Equipment		8,053,747.89
Less: Amount Paid from Income		3,299,145.98
		4,754,601.91

CURRENT ASSETS:

Cash and Cash Funds	131,472.57	
Accounts Receivable	34,873.85	
Accrued Interest	222,600.14	
Insurance Fund	42,486.11	
General Inventories	165,690.72	
Advanced Expenses	18,612.69	615,736.08
		\$31,350,983.66

* See footnote on following page, under Liabilities.

TREASURER'S BALANCE SHEET, AUGUST 31, 1919

LIABILITIES

CURRENT LIABILITIES:

Accounts Payable	\$42,488.11	
Unexpended Income from Special Funds.....	22,821.08	
Other Liabilities (Unadjusted)	32,211.06	
		<u>\$97,520.25</u>

RESERVES:

Contingencies Reserve	221,835.37	
Reserve from Ranch Operations.....	20,772.96	
Employer's Liability Insurance	42,486.11	
Depreciation	19,672.37	
		<u>304,766.81</u>

ENDOWMENTS:

Founders Endowment—General Maintenance.....	21,297,207.91	
Lands, Buildings, and Equipment.....	3,704,010.49	
Increment on Endowment Investments.....	3,462,347.79	
Jane Lathrop Stanford Library Endowment (Jewel Fund).....	500,000.00	
Medical School Endowments:		
Lane Medical Lectures	\$20,000.00	
Lane Medical Library (All)	364,948.43	
Lane Hospital Endowment	190,662.50	
Nurses' Home	2,334.19	
		<u>577,945.12</u>
Sundry Endowments	177,616.75	
		<u>29,719,128.06</u>

AMOUNT ADVANCED FROM ENDOWMENT ASSETS FOR

ADDITIONAL EDUCATIONAL PLANT*	593,233.87	
CURRENT SURPLUS	636,334.67	
		<u>\$31,350,983.66</u>

* This item of \$593,233.87 is offset by a like amount under Assets.

INCOME AND EXPENDITURES, YEAR ENDED AUGUST 31, 1919

INCOME

GENERAL INVESTMENTS:

Interest and Dividends	\$952,029.85
Rentals	35,415.08
Income from Restricted Endowments, Special Funds, etc.....	33,555.17

\$1,021,000.10

EDUCATIONAL PLANT—INCOME SECTION:

Rentals:

Dwellings, Stores, and Inn, etc.....	\$36,360.22
Less: Maintenance and Repairs.....	\$10,647.51
Depreciation	10,112.22 20,759.73

15,600.49

Dormitories	44,981.50
S. A. T. C.	88,425.52 133,407.02

Less: Operation and Maintenance.....	36,112.92
S. A. T. C.	80,803.99 116,916.91

16,490.11

Gas Pipe Line	789.60
Electric Railroad	2,522.00

3,311.60

Ground Leases—Subdivisions.....	5,625.17
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Stanford University Hospital:

Rooms, etc.	213,038.43
Expenses—Excluding Depreciation	174,478.98

38,559.45

Miscellaneous	10,339.56
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89,926.38

INCOME FROM RANCHES:

Year Ended October 31, 1918.....	319,843.50
Year Ended October 31, 1919—Estimated	150,000.00

469,843.50

Total Income—Year Ended August 31, 1919.....	\$1,580,769.98
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INCOME AND EXPENDITURES, YEAR ENDED AUGUST 31, 1919

EXPENDITURES

TREASURER'S OFFICE:

City Office Salaries and Expenses	\$40,026.94		
Legal—General	3,925.57		
Taxes—Not Allocated	6,615.67		
Insurance—Not Allocated	9,538.88		
Employer's Liability Insurance	5,000.00		
Maintenance of Real Estate and Improvements—Gen'l	5,044.98	\$70,152.04	

PRESIDENT'S OFFICE:

Salaries	23,650.00		
Supplies and Expenses	6,549.90	30,199.90	\$100,351.94

CAMPUS

INSTRUCTION AND RESEARCH:

Educational Salaries	523,821.04		
Supplies and Equipment	\$78,096.97		
Janitor Service	17,927.33		
Heat and Power	45,164.75		
	141,189.05		
Less: Laboratory and Incidental Fees.....	107,096.14	34,092.91	
Scholarships		2,173.33	
University Press: Expenses	45,261.40		
Less: Sales	38,583.10	6,678.30	566,765.58

OPERATION AND MAINTENANCE—EDUCATIONAL PLANT:

Superintendent's Office: Salaries and Expenses.....	14,389.29		
University Grounds and Watchman: Salaries and Expenses	58,690.53		
Rock Crusher	4,077.11		
Repair and Maintenance of Buildings.....	21,008.96		
Memorial Church	1,338.21		
Assembly Hall	777.70		
Repair Yards, Storeroom, Fire Department, etc.....	6,638.81		
General	12,643.63	119,564.24	686,329.82

MEDICAL SCHOOL, SAN FRANCISCO

EXPENSES: Educational Salaries.....	71,611.09		
Supplies and Expenses	14,484.48		
Light, Heat, and Repairs.....	9,871.04	95,966.61	
Less: Tuition Fees	7,139.00		
Clinical Fees	19,820.88	26,959.88	69,006.73

LANE HOSPITAL: Professional Services.....	33,136.39		
Nurses' Salaries	54,946.40		
Management and Office	11,391.03		
House Services	28,278.97		
Supplies	50,256.18		
Repairs and Maintenance	2,381.37		
Bad Debts	1,230.38		
Free Beds	9,224.34	190,845.06	

Less: Fees—Private Patients	58,326.81		
Clinic Patients	63,284.38	121,611.19	69,233.87

NURSES' HOME—Repairs		232.17	
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LANE MEDICAL LIBRARY: Supplies, Light, and Heat.....		4,086.59	142,559.36
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HOPKINS MARINE STATION, PACIFIC GROVE

EXPENSES: Supplies and Expenses.....	1,004.01		
Less: Laboratory Fees	409.00		595.01
Carried Forward			929,836.13

EXPENDITURES FOR CAPITAL ACCOUNT, YEAR ENDED
AUGUST 31, 1919

<i>Carried Forward</i>				\$929,836.13
SURPLUS INCOME EXPENDED FOR PLANT AND EQUIPMENT,				
YEAR ENDED AUGUST 31, 1919;				
Departmental Equipment—Medical School	\$2,718.20			
Departmental Equipment—Other	14,676.98			
Library Books	21,429.48			
Lane Medical Library Books	4,658.18			
Lane Medical Library Books—Barkan Fund	195.67	\$43,678.51		
Sewers and Roads		888.44		
Repayment to Endowment Funds, to apply on temporary loan, for additional plant:				
Annual Appropriation from Income	100,000.00			
Special Appropriation from Ranch Earnings	250,000.00	350,000.00	394,566.95	
Total Expenditures, Year Ended August 31, 1919				1,324,403.08

INCOME OVER EXPENDITURES FOR THE YEAR—*Carried to Surplus*..... 256,366.90

SURPLUS ACCOUNT

CURRENT SURPLUS: Balance from Income	256,366.90			
Pacific Improvement Company—Dividend	13,733.36			
Profit from Sale of Vina Ranch	373,508.12	643,608.38		
Less: Adjustments—Prior Periods		7,273.71		
Current Surplus, per Balance Sheet, August 31, 1919		636,334.67		
SURPLUS EXPENDED UPON EDUCATIONAL PLANT TO AUGUST 31, 1919		3,299,145.98		
Total—Per Balance Sheet				\$3,935,480.65

APPENDIX I.

GIFTS TO THE UNIVERSITY

GENERAL

- From Brodie G. Higley, of Hudson Falls, N. Y., \$150, a fourth installment in the maintenance of the B. G. Higley ('99) scholarship for the academic year 1918-19.
- From C. F. Elwell, of Paris, France, \$300 for the maintenance of the C. F. Elwell Scholarship in Electrical Engineering for the academic year 1918-19.
- From Judge George E. Crothers, of San Francisco, \$100, to maintain the Crothers Law Scholarship for the academic year 1918-19.
- From Mrs. J. M. Braly, of Fresno, Cal., \$250, to maintain for the academic year 1918-19 the Bertha Hyde Braly Scholarship, open to women students of Fresno and Santa Clara Counties.
- From Mrs. J. E. McDowell, of Stanford University, \$150, to maintain the Roble Club Scholarship for the academic year 1918-19.
- From the estate of Horace Davis, deceased, \$10,000, the income of which is to be used as a loan fund.
- From the estate of Mrs. Janet Taylor, deceased, \$5,664.80, to be added to the William Burton Barber Loan Fund.
- From Mrs. Anna M. Barber, of Alameda, Cal., \$200, to be added to the William Burton Barber Loan Fund.
- From Mrs. Wilmer J. Gross, of San Jose, Cal., \$150, to establish a scholarship in memory of her husband, Wilmer J. Gross, Stanford '16, who died in service in France; this scholarship to become available in 1919-20.
- From Miss Ray Weaver, of Turlock, Cal., \$150, to establish a scholarship in memory of her brother, William Irvin Weaver, who died in service in France, this scholarship to be known as the William Irvin Weaver Scholarship and to become available in 1919-20.

BOTANY

Gifts to the Herbarium were as follows:

- From Miss Georgia Bentley, 12 specimens of California plants.
- From Miss Lois Dale, 57 specimens of Oregon plants.

From Mrs. Roxana S. Ferris, 510 specimens from the arid Southwest; and 70 specimens of California plants.

From Professor Harold Heath, 25 specimens of Alaskan plants.

From Miss Serena Philips, 38 specimens of Illinois plants.

From Mr. Maynard Tyler, five specimens of Idaho plants.

From Miss Grace Wood, six specimens of California plants.

From Mr. W. W. Wagner, 61 specimens of California plants.

From Mr. E. A. McGregor, 510 specimens from the Colorado Desert.

The Bureau of Plant Industry of the U. S. Department of Agriculture has given 100 young trees and shrubs to the Arboretum.

CIVIL ENGINEERING

From Mr. and Mrs. Timothy Hopkins, of Menlo Park, Cal., five models of bridge structures made by the 319th Engineers of Camp Fremont.

CHEMISTRY

From the Sperry Flour Company, \$750 to establish a fellowship in the Department of Chemistry for the academic year 1919-20, for the study of wheat and wheat flour.

EDUCATION

From Miss Charlotte S. Playter, of Piedmont, Cal., \$500 to continue the Buckel Fellowship during the academic year 1918-19.

From Professor E. P. Cubberley and Professor L. M. Terman, of Stanford University, \$250 each for ten years, for the establishment of research fellowships in problems relating to school administration and in the study of psychological and educational problems relating to gifted children.

ELECTRICAL ENGINEERING

From the General Electric Company, one "oil-well" motor, 50 h.p., 220 volts, 60 cycles, adjustable speed, valued at approximately \$700.

From the Signal Corps Radio Laboratory, War Department, three type VT-2 electron tubes, and two sockets, valued approximately at \$30.

HISTORY

From the Japanese Consul, San Francisco, \$1800, for the salary of an instructor in Japanese History and Government for the academic year 1918-19.

HOPKINS MARINE STATION

From Professor C. H. Gilbert, of Stanford University, books, including sets of Proceedings of California Academy of Sciences, Washington Academy, and Bulletin of the Bureau of Fisheries.

LIBRARY

From Mr. J. C. Cebrian, of San Francisco, 54 Vols. of Spanish literature.
From Dr. J. C. Branner, of Stanford University, the Library of Count de Montessus de Ballore on Earthquakes.

MEDICAL SCHOOL

From U. S. Social Hygiene Board, \$7200 for the promotion of research along the line of social disease.
From Mr. and Mrs. William Fitzhugh, of San Francisco, \$12,000 for the purchase of radium.
From Mr. Timothy Hopkins, of Menlo Park, Cal., \$200 to be credited to the Patients' Fund toward the endowment for free beds.

MUSEUM

From Mr. W. H. Shockley, of Palo Alto, the loan of a collection of Chinese art.
From Mr. J. E. Hewston, of Stanford University, the loan of a collection of South Sea Island implements.

PHYSICS

From Mr. Franklin W. McCormack, of San Francisco, an induction coil used in X-ray work.

APPENDIX II.

DEPARTMENTAL REPORTS

ANATOMY

The departmental faculty for the year consisted of Professors Arthur William Meyer, Frank Mace McFarland; Associate Professor Clara S. Stoltenberg, and Assistant Professor Edgar Davidson Congdon. Professor Congdon was absent on leave for a period of six weeks at the beginning of the fall quarter, with an extension of several weeks for Red Cross work and because of illness. Professor Meyer also enjoyed a leave of one week at the beginning of the summer quarter to enable him to complete some work at the Carnegie Laboratory of Embryology where he had been engaged in investigations during the spring quarter. Professor Congdon kindly took charge of the courses in Gross Anatomy during this week.

In addition to the regular services of Mr. Teizo Kainan Shimada technical assistance was rendered since February, 1919, by Miss Emily M. Bartlett, whom the department was fortunate in securing after her release from government service. Miss Bartlett's presence has enabled the department to continue work begun almost a decade ago and to begin to place the equipment upon a more satisfactory basis. Because of her educational qualifications Miss Bartlett will be able to give valuable assistance in the productive activities of the department. Temporary technical assistance was given also by Mr. Arthur Fulton Warren.

Courses were offered also during the summer quarter, largely to accommodate former students returning from service abroad. Since these courses were given without any addition to the faculty, they involved the assumption of a third more teaching on the part of some one. The same thing was true during 1917-18 because of the resignation of Professor Clark who had been engaged to fill the vacancy caused by the leave granted during this year to Professor Meyer. Since courses cannot be offered during the summer quarter in the future without similarly encroaching upon time which should preferably be devoted to extending the confines of anatomy, it will be necessary to enlarge the staff or to discontinue offering these courses.

The publications of the department were as follows:

- Meyer, A. W.: Hydatiform degeneration with deductions from over one hundred and fifty new cases. *Am. Jr. Obst.*, Vol. 78, 1918.
- Hydatiform degeneration in tubal pregnancy. *Surg. Gyn. & Obst.* Vol. 28, 1919.
- The occurrences of superfetation. *J. A. M. A.* Vol. 72, 1919.
- with H. M. N. Wynne: Ovarian pregnancy, with report of a case. *J. H. H. B.*, Vol. 30, 1919.
- A suggestion from Plato, with others. *Science*, Vol. 49, 1919.
- Uterine, tubal and ovarian lysis and resorption of conceptuses. *Biol. Bull.*, Vol. 33, 1919.
- Sidelights from abnormal conceptuses. *Anat. Rec.*, Vol. 14, 1919.
- On the nature, occurrence and identity of the Hofbauer cell. *Jr. Morph.*, Vol. 32, 1919.

Professor Congdon has been engaged in a study of septa in the sphenoidal sinus and upon a report on some anomalies. The former is now in press. Mr. R. L. Draper has completed his investigation on the prenatal growth of the guinea pig, and Messrs. Haig and Sebastian began investigations on maceration changes in embryos and fetuses.

It is with unusual pleasure that I report that Professor Harold Heath has generously donated a collection of bones of California Indians gathered with much care by himself, to this department. Since this collection contains a very unusual skull and also others illustrating various interesting phases of dentition, it is of especial value to the department and to the University. I also take occasion to express my gratification at the continued interest shown by practicing physicians and surgeons in our efforts to secure an embryological collection for purposes of investigation. The equipment of the department was enriched also by the purchase of a collection of over fifteen hundred adult and fetal temporal bones, which was thoughtfully brought to my attention by Professor Sewall. Dr. Harry B. Reynolds, of Palo Alto, kindly donated back numbers of several current medical journals to the department.

The courses given and the enrolment in each are listed in the accompanying table. Since the statement for the summer term 1917-18 was not included in the last report, I add it here.

Instructor	Course	Unit Hours	Hours Lec. per Wk.	Hours Lab. per Wk.	Summer 1918	Attendance				
						Autumn Quarter	Winter Quarter	Spring Quarter	Summer Quarter	
McFarland.....	1. Histology and micro. anat.....	8	3	12	.....	31	.....	21	.....
Congdon-Meyer..	2. Osteology	1-3	1	5	.....	.....	21	.....	.....
Congdon-Meyer.	3-4-5. Dissection	3-8	.....	12-15	.....	14	23	.....	.....
Congdon.....	3-4-5. Dissection	3-8	.....	15	9	.....	.....	17	.....
Meyer.....	3-4-5. Dissection	3-8	.....	15	.....	.....	.....	.....	24	
Stoltenberg.....	6. Nervous system	5	2	9	.....	11	2	12	.....
Stoltenberg.....	10. Sense organs	2-4	2	12	.....	4	6	.....	.....
McFarland.....	8-11. Sp. histology.....	.....	.....	.....	.....	.....	2	1	.....
Meyer.....	Topographic anat.....	2-5	2	3-15	.....	7	10	.....	4	
Congdon.....	Topographic anat.....	1-5	.....	3-15	.....	.....	.....	2	.....
Meyer.....	Investigation and special work .....	.....	.....	.....	.....	2	2	.....	1	
Totals .....		.....	.....	.....	9	69	66	53	29	

ARTHUR WILLIAM MEYER,
Professor of Anatomy.

APPLIED MATHEMATICS

The faculty of the department was as follows:

Professors Leander Miller Hoskins, Halcott Cadwalader Moreno and Sidney Dean Townley, and Associate Professor William Albert Manning.

The courses given and the enrolment in each were as follows:

Instructor	Course	Units	Attendance				
			Autumn Quarter	Winter Quarter	Spring Quarter	Summer Quarter	
Townley.....	A. Map reading and navigation	4	55	.....	.....	.....
Manning, Moreno Hoskins.....	1a. Elementary analysis	4-5	180	74	.....	.....
Moreno, Manning.....	1b. Elementary analysis	5-5	.....	76	.....	.....
Hoskins, Moreno.....	2a. Calculus	4-5	32	.....	95	.....
Manning, Hoskins.....	2b. Calculus	4-5	33	42	.....	.....
Manning.....	2c. Calculus	2	.....	13	.....	.....
Hoskins.....	3a. Theoretical mechanics	5-5	.....	59	17	.....
Hoskins.....	3b. Theoretical mechanics	5	.....	.....	56	.....
Townley.....	10. Descriptive astronomy	4-4-4	9	14	.....	12	
Townley.....	10a. Elem. practical astronomy.....	1	.....	.....	.....	5	
Townley.....	11. Practical astronomy	4	.....	.....	9	.....
Townley.....	12. Adv. practical astronomy.....	3-3	1	1	.....	.....
Townley.....	15. Study of variable stars	5	.....	.....	.....	1	
Totals.....		.....	310	279	231	18	

LEANDER MILLER HOSKINS,
Professor of Applied Mathematics.

BACTERIOLOGY AND EXPERIMENTAL PATHOLOGY

The teaching staff for 1918-19 consisted of Wilfred Hamilton Manwaring, professor; Charles Victor Burke, Ehler Henry Eiskamp, instructors; Georgina Spooner Burke, lecturer; Frank E. Blaisdell, Jr., Hyman Miller, teaching assistants.

The following courses were given:

Course	Units	Instructor	Enrolment			
			Autumn Quarter	Winter Quarter	Spring Quarter	Summer Quarter
A. Hygiene of the infectious diseases....	1	Manwaring	180	41	.....	.....
C. Household bacteriology	2	Burke	95	.....	.....	6
1. General bacteriology	4-6	Blaisdell	.....	9	15*	12
2. Pathogenic bacteriology.....	6-8	Burke	15	.....	13	.....
3. Elementary serology.....	4	Eiskamp	4	7	2	3
4. General pathology A.....	6-8	Manwaring	.....	19	.....	.....
4a. Supplementary operations	2-3	Eiskamp	3	17	.....	.....
4b. Histopathologic technique	2	Miller	2	3	.....	.....
4c. Functional pathology	1	Manwaring	.....	19	.....	.....
5. Advanced work, clinical laboratory methods, etc.....	5-10	Manwaring	1	3	2	2
6. Journal club	2	Burke	.....	.....	.....	6
7. Research	10	Manwaring	1	1	.....	.....
Totals.....			206	119	32	29

* Enrolment limited to medical students who can transfer to San Francisco in April, 1920.

WILFRED HAMILTON MANWARING,
Professor of Bacteriology and Experimental Pathology.

BOTANY

The teaching force has included Professors Douglas Houghton Campbell, and George James Peirce; Associate Professors Leroy Abrams and Leonas Lancelot Burlingame; and Instructor James Ira Wilson McMurphy. Miss Serena Philips acted as Assistant in Botany throughout the year, including the summer quarter. Mr. James McMurphy, for a number of years instructor, has been promoted and becomes assistant professor of Botany.

The work of the department has been greatly affected both by the war and by the pandemic of influenza. All the members of the staff were engaged, directly or indirectly, in war work. All the courses offered were greatly disturbed by the S. A. T. C., and one can only hope that it was more useful as a means of military training than it was successful as continuing academic work. Between the S. A. T. C. and the influenza the work of the fall quarter was seriously disrupted. Dur-

ing the remainder of the year this department was gratified to experience the revival of interest in academic work on the part of its students, and to be stimulated by the return, with continued desire to finish their studies, of those students who had been in service. Represented in many arms of the service, the department is thankful that the mortality and injury have been small.

The courses offered during the year, and the attendance, were as follows:

Instructor	Course	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Burlingame, Philips, Abrams.....	1a. Elementary botany	5	20	.....	.....	8
Abrams, Philips.....	1b. Elementary botany	5	.....	22	.....	.....
Peirce, Philips.....	1c. Elementary botany	5	.....	.....	22	.....
McMurphy.....	4. General fungi	5	.....	4	.....	.....
McMurphy.....	6. Plant pathology	5	.....	.....	3	.....
Campbell.....	7. Bryophytes	5	.....	4	.....	.....
Campbell.....	8. Pteridophytes	5	.....	.....	2	.....
Abrams.....	10. Systematic botany	5	.....	.....	.....	2
Abrams.....	11. Geographical distribution	5	2	.....	.....	.....
Peirce.....	12. Nutrition, respiration	5	5	.....	.....	.....
Peirce.....	13. Growth, irritability, and reproduction	5	.....	4	.....	.....
Burlingame.....	15. Plant breeding	5	.....	9	.....	.....
Burlingame.....	15a. Plant breeding	3-5	.....	.....	10	.....
McMurphy.....	17. Advanced pathology	By ar.	.....	4	.....	.....
Abrams.....	19. Advanced systematic botany	3	.....	.....	.....	1
Burlingame.....	20. Genetic problems	By ar.	.....	.....	7	.....
Peirce.....	21. Advanced physiology	By ar.	.....	1	3	.....
Abrams.....	24. Advanced systematics	By ar.	.....	1	.....	.....
Abrams.....	25. Research	8	.....	.....	.....	1
Peirce.....	26. Physiology research	By ar.	.....	1	.....	.....
McMurphy.....	Algae (at Hopkins Marine Station).....	5	.....	.....	.....	6
Totals			27	50	47	18

Professor Campbell completed during the year the revision of his book, "Structure and Development of the Mosses and Ferns," which was published by the Macmillan Company. He has continued his studies on the origin of the Hawaiian flora, and the results of these studies have been published by Stanford University. It is hoped to supplement these investigations by further collections during the present summer,

when he hopes to make another visit to the islands. Further investigations have been carried on upon a collection of liverworts made some years ago in the East Indies. One paper has been published during the year, and another is now ready for the press.

Professor Peirce, as Chairman of the Palo Alto Chapter of the Red Cross, has continued his "war work" throughout the year. Owing to the proximity of Camp Fremont and the Base Hospital, and in consequence of the pandemic of influenza, an extraordinary burden fell upon the Red Cross in a small community, requiring the care of a much larger number of soldiers' dependents than would otherwise have been here, and during the succeeding attacks of influenza, the house and hospital care of many cases of soldiers' dependents and other civilians. Professor Peirce has also continued the preparation of a new book on Plant Physiology; has extended the testing of grains and seeds for germinating power and for infesting saprophytes and parasites by the Dewar flask method as first worked out in this laboratory; has taken part in a nation-wide coöperative experimental investigation of the nutrient salt requirements of wheat plants; has begun, with one of his students, an experimental investigation of the movement of sap upward and downward in vines; in coöperation with Professor Burlingame, has made some examination of the processes involved in the separation of plant fibres from the surrounding tissues; and is preparing for publication the investigations of the effects of fumes from industrial plants upon neighboring forest and other vegetation. Professor Peirce was invited again to give two courses at the Summer Session of the University of California.

Associate Professor Abrams has continued his work on the preparation of an illustrated flora of the Pacific States. The spring quarter was spent in study at the National Herbarium in Washington, the New York Botanical Garden, and the Gray Herbarium of Harvard University.

Associate Professor Burlingame has been engaged in the preparation of illustrations for a text-book of botany and has continued his field and garden studies of progressive mutations in the genus *Lupinus*. Portions of this work will be published in the near future. The genetic analysis of *Clarkia* has made successful progress so that some of the results will be available for publication next spring. He is now engaged with Mr. Hampton in an attempt to determine the more exact chemical relations of the genetic factors with the primary substances producing anthocyanin colors.

Instructor McMurphy has continued his studies of the local fungi, and has added several specimens to the Herbarium. The diseases of the alders, willows and poplars, due to *Cytospora*, along the San Francisco Creek, have been given further attention, and Mr. Harold C. Hampton has isolated and grown three species of *Cytospora* in pure culture. Additional plantings have been made in the Experimental Garden, and observations on the "blotch diseases" of the cereals have

been continued there. During the fall quarter Mr. McMurphy was in the field in coöperation with the Cereal Diseases Division of the United States Department of Agriculture. During the summer quarter, at the Hopkins Marine Station, he has paid special attention to the algae of the vicinity, and has begun a study of the vegetation of the localities on Huckleberry Hill, near Pacific Grove, occupied by the dwarf cypresses (*Cupressus goveniana*) as compared with that on the so-called "Mendocino Plains" where the same cypresses appear. Some of the more interesting plants have been removed to the Experimental Garden for continued observation.

Professor Abrams, the Curator of the Dudley Herbarium, reports that the mounted collections of Vascular plants have been increased by 9893 herbarium sheets, bringing the total collections to 97,643. Mrs. Ferris, Assistant in the Dudley Herbarium, was sent by the Department on a collecting expedition during the months of June and July into the little known regions of eastern Oregon. She was accompanied by Miss Rena Duthie, a graduate student. They secured much valuable material, about 2500 specimens in all.

GEORGE JAMES PEIRCE,
Professor of Plant Physiology.

CHEMISTRY

The instructing staff of the department consisted of Professors Robert Eckles Swain, Lionel Remond Lenox, Edward Curtis Franklin, and Stewart Woodford Young; Associate Professor John Pearce Mitchell; Assistant Professor William Henry Sloan; and Instructors Alice Ruth Berger, William Edmund Burke, Nathaniel Howell Furman, Ernest Oertly, and Norris Watson Rakestraw. In addition, temporary appointments were made to provide for the absence of other members of the staff, as follows:

Professor Richard Sydney Curtiss, formerly of Throop College of Technology, for the autumn quarter, to conduct the courses in organic chemistry; Professor James Kendall, of Columbia University, for the summer quarter to offer lecture courses in general inorganic chemistry and the theories of solutions; Instructor Rollin Guizot Myers for the autumn quarter in physiological chemistry, and Alfonso Cornejo, Teaching Fellow, for the autumn quarter in general inorganic chemistry.

The courses of instruction offered in lecture and laboratory work and the enrolment in each course, are given in the following tabular statement:

LECTURES

Instructor	Course	Units per week				Attendance			
		First Quarter	Second Quarter	Third Quarter	Fourth Quarter	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Furman.....	1. Gen. inorganic.	3	.....	.....	.....	143	.....	.....	.....
Mitchell.....	2. Gen. inorganic..	1	.....	.....	.....	40	.....	.....	.....
Mitchell.....	3. Gen. inorganic..	.....	3	.....	.....	.....	122	.....	.....
Mitchell, Kendall.....	4. Gen. inorganic..	5	.....	.....	6	73	.....	.....	35
Mitchell.....	5. Principles .....	.....	4	.....	.....	.....	55	.....	.....
Swain.....	6. Principles .....	.....	.....	4	.....	.....	.....	67	.....
Curtiss.....	7. Organic	5	.....	.....	.....	46	.....	.....	.....
Franklin.....	8. Organic .....	.....	5	.....	.....	.....	25	.....	.....
Oertly.....	10. Elem. organic..	.....	.....	5	5	.....	.....	33	8
Young.....	13. Gen. physical...	5	.....	.....	.....	11	.....	.....	.....
Young.....	14. Gen. physical...	.....	5	.....	.....	.....	12	.....	.....
Burke.....	16. Electro-chemis-try	.....	.....	3	.....	.....	.....	11	.....
Swain.....	17. Physiological ..	5	.....	.....	5	27	.....	.....	24
Franklin, Swain...	18. Seminary	1	1	1	1	7	13	17	6
Kendall.....	19. Theory of solu-tions .....	.....	.....	.....	2	.....	.....	.....	14
Totals .....		.....	.....	.....	.....	347	227	128	87

LABORATORY

Instructor	Course	Units per week				Attendance			
		First Quarter	Second Quarter	Third Quarter	Fourth Quarter	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Mitchell, Furman, Cornejo.....	a. Elem. inorg.....	2	.....	.....	.....	42	.....	.....	.....
Mitchell, Burke, Furman.....	b. Gen. inorg.....	2	3	3	.....	147	48	7	.....
Rakestraw.....	c. Gen. inorg.....	.....	.....	.....	3-5	.....	.....	.....	28
Lenox, Sloan, Berger.....	d. Qual. anal.....	5	5	5	5	21	54	36	6
Franklin, Curtis, Oertly.....	e. Org. prep'n.....	5	3-5	5	5	2	16	13	4
Sloan, Furman.....	f. Quant. anal.....	5	5	5	5	16	18	28	17
Sloan, Furman.....	h. Quant. anal.....	5	5	.....	5	5	10	.....	3
Lenox, Berger.....	i. Adv. quant. analysis .....	.....	6	.....	.....	.....	1	.....	.....
Young, Burke.....	k. Phys. chem. measurements	5	3-4	5	.....	3	2	2	.....
Swain, Myers.....	l. Physiological ..	5	.....	.....	5	27	.....	.....	23
Franklin.....	x. Research and spec. lab.....	.....	4-5	9-15	.....	.....	3	3	.....
Sloan.....	x. Research and spec. lab.....	3	.....	.....	.....	1	.....	.....	.....
Swain.....	x. Research and spec. lab.....	1-4	10	3-10	.....	7	2	6	7
Young.....	x. Research and spec. lab.....	3-8	2-10	4-8	.....	5	8	6	2
Mitchell.....	x. Research and spec. lab.....	.....	.....	2	.....	.....	.....	1	.....
Totals .....		.....	.....	.....	.....	276	162	102	90

The total registration of major students in Chemistry for the autumn, winter and spring quarters was 210, of whom 20 were in graduate standing. The major registration for the summer quarter was 38, of whom 12 were graduate students.

Mr. N. Howell Furman, Instructor in Analytical Chemistry, resigned at the close of the academic year to accept an Assistant Professorship at Princeton University.

Mr. Norris F. Hall, Instructor in Inorganic Chemistry, on leave of absence, as Captain in the Chemical Warfare Service of the American Expeditionary Forces in France, resigned in May to accept appointment as an Assistant Professor in Chemistry at Harvard University.

Mr. Tenney L. Davis, on leave of absence as a Lieutenant in the Ordnance Department of the U. S. Army in France, resigned to accept appointment as an Assistant Professor in Chemistry at the Massachusetts Institute of Technology.

During the present academic year Professor Franklin has served as a member of the Advisory Board to the Director of the Bureau of Mines; as Physical Chemist, Bureau of Standards; as a member of the Advisory Board on Poison Gases, Chemical Warfare Service; as Consulting Chemist, Nitrate Division, Ordnance Department, U. S. Army, engaged in the study of catalysts for the synthesis of ammonia; as a member of the Division of Chemistry and Chemical Technology, National Research Council; as a member of the Committee on Chemical Compendia and of the Priestly Memorial Committee and as Councilor-at-Large of the American Chemical Society; as a member of the United States Committee on the Ramsay Memorial Fund; of the Committee on grants for Research of the American Association for the Advancement of Science; of the Executive Committee of the Pacific Division, A. A. A. S.; and of the Committee on Scientific Research of the State Council of Defense.

Work of research in progress by Professor Franklin dealt with the following topics:

The action of potassium amide on salts of iron, tungsten, and molybdenum.

Investigations on catalysts for the synthesis of ammonia.

With Alfonso Cornejo, on the preparation of some new ammonio salts.

With B. R. Mathews, on benzenesulfonitramide, toluenesulfonitramide and some of their salts.

With Francis W. Bergstrom, on vapor pressures of ammonia and sulphur dioxide.

Professor Young returned from his work as Physical Chemist of the Bureau of Standards at Washington at the beginning of the autumn quarter. Research work has been in progress during the year with graduate students on fractional distillation with a regulated still-head; on the mutual flocculation of colloids; on the potential of copper electrodes; low temperature welding; the synthesis of ammonia; the polarization of electrodes in anhydrous alcohol; and on salt mists.

Professor Swain has carried on work of research with Instructor Norris W. Rakestraw on the chemical changes in the blood in fatigue; with Mr. Rollin Guizot Myers on the composition of the blood of the whale, and of certain marine molluscs; and with Mr. Charles M. Fulkerson on the interference of asparagine in the quantitative estimation of allantoin.

Instructor Oertly has continued his work on the formation of aniline-black from aniline on wool, and, in collaboration with Mr. Rollin G. Myers, completed for publication a study of the relation between the constitution and the taste of organic compounds.

The John Maxson Stillman Scholarship in Chemistry, created from the Stillman Testimonial Fund, which was presented to Professor John Maxson Stillman in May, 1917, by graduates and former students in Chemistry, and others, on the occasion of his retirement from active service in the University, has been awarded for the ensuing academic year to Mr. Alan C. Richardson of Washington, D. C., who thus becomes the first recipient of this scholarship.

Reference should also be made to the creation of a Fellowship in Chemistry of the value of \$750 for the next academic year by the Sperry Flour Company of San Francisco. It is understood that the holder of this Fellowship shall pursue work of research on some topic related to the chemistry of cereals, particularly of wheat and wheat flour, used in bread-making.

ROBERT ECKLES SWAIN,
Professor of Chemistry.

CIVIL ENGINEERING

The teaching force of the department was as follows: Professors Charles David Marx, Charles Benjamin Wing, and John Charles Lounsbury Fish; Assistant Professors Charles Moser, John Harrison Foss, and Lawrence Edminster Cutter.

During the fall quarter of the academic year 1918-19 the work of the department of Civil Engineering had to be adjusted to the needs of the students in the Students' Army Training Corps, a branch of which was established at Stanford University. An extra burden was thrown on the instructors in introductory engineering subjects, and the work, because of somewhat trying conditions, was not as successful as we would have liked to make it. Professors Fish and Cutter, the latter recalled from his vacation quarter, took up the work with singular devotion, and adapted it to the needs of the men, as outlined by the War Department Committee on Education.

It must be confessed, however, that the return to normal conditions, after the signing of the armistice and the discontinuance of the S. A. T. C., was a great relief. It meant, of course, additional readjustment of work

during the winter quarter, but this was accomplished without much trouble, and at the opening of the spring quarter we were practically able to carry the courses ordinarily scheduled, with the exception of those advanced courses usually given by Professor C. B. Wing whose duties, as Lieutenant Colonel of the 23d Highway Engineers, still kept him abroad. However, he has just returned and the department will be much strengthened by his return.

Assistant Professor J. H. Foss was absent during the year on sabatical leave. He was engaged on important irrigation work in the Hawaiian Islands, and at the end of the academic year sent in his resignation, which the department was sorry to accept. Mr. Foss was so successful in the work under his charge in Hawaii that his employers offered him a situation at a salary many times greater than the University was paying him; and, much as he regretted to leave the teaching profession, he felt he owed it to his family to accept the offer.

As stated above, we found it necessary to repeat a number of courses during the winter quarter to meet the needs of the men returning to the University at Christmas time, and the tabulation below gives the detailed information.

Instructor	Course	Units	Attendance		
			First Quarter	Second Quarter	Third Quarter
Fish and assistants...	Eng. 1. Linear drawing.....	1	59	57	47
Fish and assistants...	Eng. 2. Lettering	1	54	77	88
Cutter and assistants...	Eng. 3. Descriptive geom.....	3	202	77	.....
Moser.....	Eng. 10. Applied mechanics	5	31	.....	.....
Moser.....	Eng. 11. Applied mechanics	5	.....	18	.....
Moser.....	Eng. 12. Hydraulics	5	.....	.....	53
Fish and assistants...	C. E. 20. Elem. surveying	3-8	42	25	.....
Fish and assistants...	C. E. 23. Spec. surveying	2-6	9	10	.....
Fish.....	C. E. 30. Eng. economics	3	.....	.....	19
Fish and assistants...	C. E. 40. R. R. surveying	5	.....	.....	25
Fish.....	C. E. 41. R. R. construction	2-4	.....	4	2
Fish.....	C. E. 44. Spec. R. R. surveying.....	3-4	.....	.....	3
Moser and assistants...	C. E. 50. El. of design.....	3	10	.....	.....
Moser.....	C. E. 51. El. of design.....	3	.....	10	.....
Moser.....	C. E. 52. El. of design.....	5	.....	.....	10
Moser.....	C. E. 53. El. of design.....	3	1	3	.....
Marx.....	C. E. 60. Water supply.....	5-10	6	2	.....
Marx.....	C. E. 61. Water supply.....	2-10	.....	6	1
Marx.....	C. E. 62. Water supply.....	5-10	.....	.....	3
Totals.....			414	289	251

CHARLES DAVID MARX,
Professor of Civil Engineering.

ECONOMICS AND POLITICAL SCIENCE

The teaching staff in Economics and Political Science on regular appointment, and in residence at least a part of the year, consisted of Murray Shipley Wildman and Albert Conser Whitaker, professors; Eliot Jones and Victor J. West, associate professors; Frederic Benjamin Garver, assistant professor; Yamato Ichihashi, lecturer; Nathaniel Sanders, instructor, and Earl S. Dysinger, assistant.

Professor James Allen Smith of the University of Washington gave instruction for three quarters, beginning with January. He was appointed to take the place of Professor Alvin S. Johnson, who was absent on leave at the first of the year and who resigned during the winter quarter.

Dr. Elmer Isaiah Miller of the Chico State Normal School was appointed for the year as acting associate professor of political science because of the absence of several members of the staff.

Miss Margaret Lothrop was absent all the year in the Service of the American Red Cross in France, as a member of the Stanford Women's Unit.

Mr. Jones was engaged during the summer and autumn of 1918 with the Central Statistical Bureau in Washington. Mr. West was with the United States Bureau of Efficiency during the same time. Mr. Garver was with the United States Shipping Board through the fall and winter, and Mr. Wildman was with the Bureau of Planning and Statistics of the War Industries Board during the fall and the Price Section of the same board during the winter. These absences involved many changes in the program of courses as previously announced and caused no little inconvenience to the students whose plans were disarranged, and also to the members of the staff who remained at their posts and were compelled to so reconstruct their own schedules as to minimize the effect of disorganization.

In the spring Major John B. Canning was reappointed Assistant Professor, and is expected to be in residence at the opening of the autumn quarter.

At the meeting of the Trustees in July a department of Political Science was created. Mr. West was promoted to the rank of Professor and transferred to the executive headship of the new department. At the same time Mr. Garver tendered his resignation in order to accept an associate professorship in the University of Minnesota.

The number of students graduating in the department was 24. Because of enlistments in the military and naval service, the enrolment of advanced students was unusually small, while the adjustments made necessary by the Students' Army Training Corps caused such irregularity in attendance in the more elementary classes as to prevent any fair comparison with the statistics of attendance in normal years.

Titles of courses and enrolment in each are given below:

Instructor	Course	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Whitaker, Jones, Wildman.....	1. Elements	5	137	139	123	29
West.....	2. Elements of political science..	5	.....	185	.....	23
Sanders.....	3. Elementary accounting	5	40	41	.....	46
Dysinger, Jones.....	5. Railway transportation	4-5	67	.....	.....	17
Miller.....	7. Financial history of U. S.	3	.....	34	.....	.....
Dysinger.....	8. Resources	3	.....	.....	52	.....
Miller.....	9. State and local government....	5	.....	36	72	.....
Whitaker.....	10. Bond values and capitaliza- tion	2-4	27	.....	116	20
Whitaker.....	11. Business administration	2	51	.....	.....	.....
West.....	15. Problems of state government	3	.....	.....	.....	2
Whitaker.....	20. Corporation finance	4	.....	.....	41	.....
Garver.....	21. Public finance a, b.....	3-4	.....	.....	25	9
Garver.....	22. Labor problems	4	.....	.....	56	.....
Dysinger.....	26. Money and credit	3	39	.....	.....	.....
Whitaker.....	28. Foreign exchange	4	.....	.....	.....	11
Jones.....	30. Water transportation	4	.....	.....	72	.....
West.....	34. Federal government	4	.....	.....	31	.....
Miller, Smith.....	36. Municipal government	4	.....	.....	52	14
Smith.....	39. Colonial government	4	.....	.....	2	.....
Garver.....	40. Tariff problems	3	.....	.....	.....	4
Jones.....	50. Railway problems	4	.....	23	.....	.....
Jones.....	51. Principles of economics	3	.....	.....	.....	10
Wildman.....	52. Banking	3	.....	.....	46	.....
Ichihashi.....	53. Population	3	26	.....	.....	.....
Ichihashi.....	54. Immigration	3	.....	.....	19	.....
Sanders.....	55. Advanced accounting	5	.....	.....	39	.....
Smith.....	57. Government and industry....	4	.....	.....	26	.....
Wildman.....	58. Investments	3	.....	.....	.....	25
Whitaker.....	60. Valuation, readings	3	5	.....	1	.....
Smith.....	63. American and English gov- ernments	4	.....	19	.....	.....
Miller, West.....	64. Political parties	3-4	8	.....	10	.....
Smith.....	65. American politics	4	.....	27	.....	.....
Smith.....	66. American political theories...	4	.....	.....	.....	19
West.....	68. Seminar in government	3	6	.....	.....	.....
Jones.....	69. Seminar in transportation....	4	.....	.....	6	.....
Sanders.....	A. Secretarial training	4	70	67	95	22
Totals.....			411	636	884	251

MURRAY SHIPLEY WILDMAN,
Professor of Economics.

EDUCATION

During the year 1918-19 instruction was given by Ellwood Patterson Cubberley, professor; Percy Erwin Davidson and Jesse Brundage Sears, associate professors; William Martin Proctor and James Leroy Stockton, instructors; and William Thomas Root, fellow on the Buckel Foundation. During the summer quarter additional teaching assistance was obtained from William Thomas Root, Jr., Buckel Fellow, and J. Harold Williams, director of research in the Whittier State School and editor of the *Journal of Delinquency*.

Professor Lewis Madison Terman has been absent from the University during the entire year, continuing his work at Washington as a Major in the Sanitary Division, U. S. A., in charge of psychological work. Since his discharge from the army, in April, 1919, he has been in the employ of the General Education Board, of New York, serving on a small committee engaged in the development of a series of mass school-children intelligence tests, somewhat similar to the mass intelligence tests used in the army. He also did some work in April in directing the intelligence tests made in connection with the Virginia School Survey.

Associate Professor Sears was absent in New York during the autumn quarter, completing his work for the degree of Ph.D., at Columbia University. Instructor Proctor completed his work for the Ph.D. degree at this university in June, and was promoted to the rank of assistant professor. During March and April Professor Sears helped conduct a survey of the charitable and reformatory institutions of this State, for the State Board of Charities and Corrections. During May, Professor Sears was given a brief leave of absence to direct a survey of the schools at Boise, Idaho, and Instructor Proctor a similar leave to assist in the work. Instructor Proctor carried a portion of Professor Terman's work during the year.

The summer quarter of 1919 has been an important quarter in the work of the department. Students have come from some distance to take the courses offered, many of those coming holding important educational positions and being persons of maturity and ability. There is need for a material enlargement of the work of the department during the summer quarter, as soon as additional funds can be made available for the purpose.

During the year two fellowships were created for the use of the department, which it is expected will be of material assistance.

The World War took the men from the work during the autumn quarter, and largely during the winter quarter as well, with the result that classes were materially reduced in size. The courses offered and the attendance at each for the year are given in the following table:

Instructor	Title of Course	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Cubberley.....	1. Public educ. in America	3	32	.....	.....	.....
Sears.....	2. Intro. to the study of educ....	3	.....	28	.....	.....
Root.....	3. Hygiene of the school child	3	.....	.....	14	.....
Root.....	3. Hygiene of the school child	2	.....	.....	.....	20*
Davidson.....	10. Primary education	5	.....	.....	.....	8
Davidson.....	12. Social and moral education....	5	.....	.....	22	.....
Davidson.....	13. Educational theory	3	.....	6	.....	.....
Root.....	17. Hygiene of the school plant..	2	.....	.....	.....	24†
Proctor.....	20. Principles of secondary educ. 3	3	27	.....	37	1
Proctor.....	22. Problems of secondary educ. 3	3	.....	10	.....	.....
Proctor.....	22. Problems of secondary educ. 1½	1½	.....	.....	.....	21
Proctor.....	25. Vocational guidance in high schools	2	.....	18	.....	10
Proctor.....	27. Method and management of instruction	2	24	.....	32	.....
Proctor.....	28. Practice teaching	3	18	28	18	.....
Davidson.....	31. Social problems	5	.....	.....	7	.....
Root.....	33a. Educational psychology, I.....	4	11	.....	.....	13
Root.....	33b. Educational psychology, II....	4	.....	17	.....	.....
Stockton.....	35. Educational statistics	5	5	1	.....	.....
Williams.....	35a. Graphic methods	2	.....	.....	.....	16†
Root.....	36. Individual differences	2	.....	.....	.....	12
Williams.....	37a. Mental deficiency	2	.....	.....	.....	27†
Williams.....	37b. Juvenile delinquency	1	.....	.....	.....	24†
Cubberley.....	38. History of educ. in Europe....	2	.....	.....	19	.....
Sears.....	39. History of educ. in America	3	.....	.....	12	.....
Cubberley.....	39. History of educ. in America	3	.....	.....	.....	16
Cubberley.....	40. State school administration....	5	.....	.....	15	.....
Sears.....	41. California school system....	2	.....	.....	4	.....
Sears.....	42. Rural education	3	.....	.....	6	.....
Cubberley.....	45. City school administration....	5	16	.....	.....	.....
Cubberley.....	45. City school administration....	4	.....	.....	.....	19
Sears.....	48. School surveys and measurements	2	.....	.....	.....	20
Sears.....	49. Pedagogical tests	2½	.....	.....	.....	21†
Sears.....	50. Elementary school curriculum	5	.....	13	.....	.....
Sears.....	51. Organ. and supervision of instruction	2½	.....	.....	.....	19*
Davidson.....	55a. Experimental pedagogy	3	.....	3	.....	.....
Davidson.....	55b. Experimental pedagogy	3	.....	.....	3	.....
Davidson.....	55c. Experimental pedagogy	2-4	.....	.....	.....	5
Stockton.....	57a. Intelligence testing	4	.....	17	.....	.....
Stockton.....	57b. Intelligence testing	4	.....	.....	10	.....
Proctor.....	61. Criticism and supervision of instruc.	1	1	1	.....	.....
Cubberley.....	62b. Special courses	2-12	4	.....	9	11
Davidson.....	62c. Special courses	2-5	.....	1	.....	3
Cubberley.....	62d. Special courses	3	1	.....	.....	.....
Sears.....	62d. Special courses	5-6	.....	.....	3	2
Proctor.....	62e. Special courses	2	2	2	.....	.....
Cubberley.....	62f. Special courses	12	4	2	3	1
Root.....	62f. Special courses	2-4	1	1	6	.....
Root.....	62x. Special courses	2	.....	.....	.....	2
Totals			146	148	220	295

* First half, summer quarter.

† Second half, summer quarter.

In addition to the above, the following extra evening lectures were given during the summer quarter, under the direction of this department:

June 18—"Problems of Educational Reorganization," by Dr. S. C. Kohs, Professor of Psychology, Reed College.

July 16—"Educational Reconstruction in Germany and France," by Dr. I. L. Kandel, Lecturer on Foreign School Systems, Teachers' College, Columbia University.

July 30—"Educational Reconstruction in England," by Dr. I. L. Kandel.

August 20—"Psychological Tests in the Army," by Professor L. M. Terman, Stanford University.

I am asking Professor A. B. Clark to submit an appended report covering the work of the Division of Graphic Art.

ELLWOOD PATTERSON CUBBERLEY,
Professor of Education, and
Dean of the School of Education.

DIVISION OF GRAPHIC ART

During the year 1918-19 the teaching force of this division consisted of: Professor Arthur Bridgman Clark; Instructors Chloe Lesley Starks and Rudolph P. Schaeffer.

The courses given and attendance in each are listed below:

Instructor	Course	Units	Attendance				
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter	
Starks.....	1. Still-life	2-4	14	.....	.....	.....
Starks.....	2. Landscape	4-5	.....	.....	.....	2	
Starks.....	3. Organic form	4	.....	12	.....	.....
Clark.....	4. Design	3	10	.....	.....	.....
Schaeffer.....	4. Design	5	.....	.....	.....	16	
Clark.....	5. Art of the home	2-5	.....	.....	.....	18	
Clark.....	6a. Painters of Renaissance	3	36	.....	.....	.....
Clark.....	6b. Recent and living painters	3	.....	.....	64	.....
Clark.....	7a. Pottery	3-5	9	.....	.....	5	
Clark.....	7b. Metal work	3-5	.....	.....	27	1	
Starks.....	7d. Textiles	3-5	.....	18	.....	9	
Clark.....	8. Perspective	5	11	.....	.....	.....
Starks.....	9. Science drawing	3	1	.....	.....	.....
Clark.....	10. Teachers' course	4	.....	.....	9	.....
Clark.....	11. Seminar	1	5	.....	.....	.....
Totals			86	30	100	51	

The classes in the summer were well attended and by excellent students, a large proportion being teachers and graduates.

The maintenance of four quarters, however, is for this division a distinct burden. We have for two years maintained a full program during the first three quarters, and then duplicated much of that program during the fourth quarter. Courses which formerly took three lectures a week for a semester now take five lectures a week for a quarter. Hence, an instructor, although he may have as many months' vacation as formerly, is carrying more lectures per week during three fourths of the year. A solution of this condition may be reached by distributing the courses of instruction evenly through the four quarters, without duplication; and then compelling students to attend one or two summer quarters during their undergraduate years. Meanwhile we are overburdened with long hours of routine teaching and so prevented from preparing work for publication.

The division received during the year a gift of "War Drawings, by Muirhead Bone," "Issued by authority of the War Office, London."

ARTHUR BRIDGMAN CLARK,
Professor of Education in Graphic Art.

ELECTRICAL ENGINEERING

The teaching force of the department for the year 1918-19 consisted of: James Cameron Clark, associate professor; Henry Harrison Henline, and Arnold Keller, Jr., instructors.

Professor Harris Joseph Ryan, head of the department, was absent on sabbatical leave throughout the year. From July 1, 1918, to July 1, 1919, Professor Ryan was in active charge of the Pasadena Special Laboratory of the National Research Council, and also Chairman of the Council's San Pedro Anti-submarine Group Committee on Supersonics.

Professor Clark has served the San Francisco Section of the American Institute of Electrical Engineers as its Chairman during the year 1918-19, and went in June as its delegate to the Annual Convention of the Institute at Lake Placid Club, New York. Professor Clark has also served actively as member of the Railroad Electrification Committee of the above-mentioned Section, and has been identified with the work of the Joint Council of Engineering Societies of San Francisco. Such participation by Professor Clark in engineering activities outside the work of the department has been rendered possible only by the loyal coöperation of the other teaching members of the department.

From May to December, 1918, Instructor Henline was in the national military service. After undergoing the necessary training, he was commissioned a Second Lieutenant of Field Artillery on October 30, 1918.

Throughout this period efforts were repeatedly being made by the executives of the department and of the University to secure his return to Stanford in order that he might take part in the training of young officer material, but such efforts were wholly unavailing. Following his own application Mr. Henline received his discharge from the service on December 6, 1918, and returned immediately to his Stanford duties.

Late in the summer of 1918, an invitation was received from the Research Officer of the Signal Corps Radio Laboratory in Washington to conduct experimental studies on electron tubes to be used as radio transmitters. Professor Clark promptly accepted this invitation but was wholly prevented from undertaking such studies because of the burden of instruction and other duties thrown upon him due to Mr. Henline's absence.

During the year much progress has been made in the development and improvement of equipment and methods for the work of the dynamo laboratory and in the improvement of office-records.

The department has received important gifts in 1918-19, of which acknowledgments are made in Appendix I.

The following table exhibits the courses conducted and the registration therein during the year 1918-19:

Instructor	Courses	Units	Attendance		
			First Quarter	Second Quarter	Third Quarter
Henline.....	1. Electricity in engineering.....	3	.....	14	5
Clark, Keller.....	2. Electrical machinery	5	8	.....	.....
Keller.....	2. Electrical machinery	4	.....	4	.....
Keller.....	3. Electrical machinery	4	.....	7	.....
Clark.....	4. Electrical engineering	3	.....	7	.....
Clark.....	5. Elec. and magn. circuits	3	.....	.....	1
Keller.....	21. *Electrical machinery	3-4	17	.....	11
Totals			25	32	17

* Course 21 is an abridged form of that part of Course 2 which is given in the third quarter, and was given as a temporary expedient arising from war conditions.

JAMES CAMERON CLARK,
Acting Executive, and
Associate Professor of Electrical Engineering.

ENGLISH

The staff of the department for the year 1918-19 consisted of William Herbert Carruth*, Raymond MacDonald Alden³⁻⁴, John S. P. Tatlock*, professors; Edwin Greenlaw and Winifred Smith, acting professors; Lee Emerson Bassett⁴, Henry David Gray¹, William Dinsmore Briggs, associate professors; Samuel Swayze Seward, Jr.*, Howard Judson Hall*, Everett Wallace Smith*, Frances Theresa Russell¹, assistant professors; Edith Ronald Mirrieles*, Frank Ernest Hill*, Elisabeth Lee Buckingham¹, Arthur Garfield Kennedy³, Harriet Bradford⁴, George Fullerton Evans⁴, Miller L. McClintock, Margery Bailey⁴, instructors; Robert Luther Duffus³⁻⁴, lecturer.

Those indicated by the asterisk have been absent on leave in the service of the United States. The superior numbers indicate the quarter of regular vacation. Mr. Bassett has been promoted to a full professorship; Mr. Hill has resigned to take a position as publicity editor for the Curtiss Aviation Company; Mr. Evans completes a period of two years of acceptable service as substitute; Miss Bailey is promoted to an instructorship; Mr. McClintock succeeds Mr. Leib as instructor in public speaking; Mrs. Russell returns to service after two years and Miss Buckingham after one year of absence in study at Columbia University; Mr. Duffus again assisted in the emergency caused by Mr. Smith's absence from the work in journalism. Professor Edwin Greenlaw, of the University of North Carolina, and Professor Winifred Smith, of Vassar College, have served as visiting professors during the summer quarter, to the uncommon satisfaction of their students and colleagues.

The number of major students enrolled in the department was 211, of whom 31 were graduates. Twenty-two received the degree of A. B., seven the degree of A. M.

In the summer quarter of the second year of the new order there were enrolled sixty-five English majors, of whom twenty-four were graduate students.

In the course of the year, A. M. theses by the following were presented, accepted and filed in the University Library on the following subjects:

G. M. Boise, *The Jason Theme*; B. E. Collier, *The Steevens-Reed Editions of Shakespeare*; D. F. Gilman, *The Technique of Character-portrayal in Certain Ninetenth Century Novelists*; J. L. Knopp, *The Supernatural in Modern Symbolistic Drama*; M. M. Reardon, *Certain of Chaucer's Literary Devices*; J. P. Smith, *The Appeal to the Senses in Tennyson*; N. H. Stearn, *Shelley the Reformer*.

Attendance Report. 1918-19:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Bailey, Bradford.....	A. Elementary composition (6 sections)	1	72	59	22	.....
Gray, Seward, Russell, Evans, Kennedy, Bailey, Duffus.....	2. Composition (16 sections)....	3	abt. 120	129	90	34
Bassett, Buckingham.....	4. Vocal expression (2 sections)	3-4	41	37	42	18
Buckingham.....	5. Reading aloud	3	.....	16	.....	.....
Bassett.....	6. Practical phonetics	1	9	9	.....	.....
Bassett, McClintock.....	7. Extempore speaking	3-1½	42	42	36	18
Buckingham.....	8. Outlines of Eng. lit.....	5	.....	.....	38	.....
Carruth.....	9. American literature	5	.....	50	.....	.....
Bailey.....	10. English classics	5	27	55	.....	.....
Alden.....	11. Introd. to poetry	5	.....	31	.....	.....
Carruth, Gray, Briggs, Kennedy, Evans, Bailey, Bradford, Martin, Robinson, H. C. Brown	13. Free reading (24 sections)...	2	50	50	50	.....
Russell.....	16. Advanced composition	4	.....	22	26	.....
Duffus.....	17. News writing	3	17	26	.....	.....
Buckingham.....	18a. Play reading	3	.....	.....	.....	19
Bassett.....	19. Vocal interpretation	3	.....	11	26	.....
McClintock.....	20. Pract. debate	1-2	8	5	4	.....
Russell.....	22. Victorian prose	3	.....	35	.....	.....
Gray.....	23. Victorian poetry	3	.....	.....	27	.....
Russell.....	24. English Bible	3	.....	.....	.....	13
Alden, Gray.....	25. Shakespeare	4	.....	39	63	.....
Russell.....	27. Browning	3	.....	.....	39	.....
Evans.....	31. Advanced exposition	3	.....	.....	16	.....
McClintock.....	32. Argumentation	2-1	.....	10	11	10
Gray.....	34. Play construction	3-4	.....	9	10	.....
Carruth.....	35. Verse writing	3	.....	.....	6	.....
Seward.....	36. Short story writing	2	.....	.....	.....	3
Russell.....	37. Essay writing	3	.....	.....	.....	11
Duffus.....	40. Editorial writing	5	.....	22	.....	.....
Duffus, Staniford.....	44. Practical reporting	3	.....	12	.....	4
Staniford.....	45. Editorial management	2-3	.....	.....	.....	2
Bassett, McClintock.....	50. Public speaking (5 sections)	3-3½	12	27	29	21
Bassett.....	51. Public reading	2	11	10	15	.....
McClintock.....	52. Oral debate	2-1	.....	17	11	8
Buckingham.....	53. Teachers' course pub. sp.	2	.....	.....	.....	9
Kennedy.....	55. Old English	4	.....	3	.....	6
Kennedy.....	56. Hist. of English language.....	3	16	.....	.....	.....
Kennedy.....	58. Chaucer (elementary)	3	37	.....	.....	.....
Briggs.....	61. Milton	3	.....	.....	16	.....
Carruth.....	66. National epics	4	19	.....	.....	.....

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Carruth.....	67. Prose fiction	3		5	*	
Briggs.....	68. English fiction	5	23			22
W. Smith.....	70a. Later English drama	2-2½				11
Gray.....	71. Modern drama	4				23
Russell.....	72. Satire	4		10		
Alden.....	81. English literature, medi.	4	28			
Briggs.....	82. English literature, to 1700....	4		26		16
Briggs.....	87. Life and thought of the 16th and 17th centuries....	4		5		
Greenlaw.....	89. Great tradition	2				20
Carruth.....	90. American poetry in relation to Europe	4			37	
Tatlock.....	94. Middle English	3		3		
Carruth, Greenlaw, Alden, Seward.....	98. Teachers' course	3-2	4	5		10
Alden.....	99. Versification	3	5			
Kennedy.....	101. Introd. to English philology..	3	6			5
Seward.....	104. Comedy	4				5
Briggs.....	106. Criticism	4			8	
Tatlock.....	109. Medieval literature	3		16		
Tatlock.....	110. Chaucer, advanced	3	4*			10
Alden.....	111. Shakespeare bibliography	4	5			
W. Smith.....	111a. Shakespeare criticism	2				3
Gray.....	112. Shakespeare	4		7		9
Carruth.....	117. Journal club	2			8	
Tatlock.....	118a. Legendary hist. of Britain....	3				6
Tatlock.....	118b. Early English sem.....	3			13	
Carruth, A l d e n, Tatlock, G r a y, Briggs.....	Theses	3-9	1		3	2
Carruth, Briggs, Evans.....	War issues (4 sections).....	3	240			
Carruth.....	Journalism				22	
Totals			797	803	668	318

* Though on leave of absence, met occasionally.

The attendance upon courses as well as the actual number of courses given was considerably reduced, especially during the first quarter, during which period Stanford was a quasi-military school. Several members of the staff were in government service abroad, while others were deflected from their regular work although continuing at the University. Professor Tatlock was Assistant Director of the Students' Army Training Corps in the Southwestern District and was on leave for this purpose during the first quarter. Professor Seward continued as First Lieutenant in the Ambulance Service of the United States Army serving in France and was honored at the close by receipt of the decoration of

Chevalier de la Légion d'Honneur. Professor Hall entered the Y. M. C. A. service in France in the fall and was retired with the closing up of the educational plans of the government. Professor E. W. Smith continued in the United States Food Administration. Miss Mirrielees received leave of absence for the year to enter the Hospital Service abroad, where she was at the close of the War. Mr. Hill had prepared for the Aviation Service at Camp Kelly and was just about to receive his commission when the War ended. Messrs. Carruth, Briggs and Evans served during the first quarter as instructors in War Issues for the S. A. T. C. under the direction of the Department of History.

In the second and third quarters working conditions returned gradually toward normal, disturbed only by the return of old students desiring to take up work at irregular times. But all in all I do not feel that the irregularities of the year caused a defection in accomplishment at all to be reckoned as against the gain in seriousness observable in the student body as a whole.

The work in Journalism suffered most disturbance, owing to the continued absence of Mr. Smith and the withdrawal of Mr. Hoffman. In the uncertainties of the fall quarter it was thought best to make no permanent appointment in this field. Mr. Robert Duffus, chief editorial writer of the S. F. Call, was engaged to give the course in Editorial Writing. With his help Mr. Carruth arranged to recognize the work done on the Stanford and other journals, when properly supervised and checked, as acceptable for News Writing and Practical Reporting. The Managing Editor of the Daily Palo Alto rendered willing assistance. In this way the increasingly large number of students who wished to prepare for journalism were tided over the emergency.

Professor Carruth delivered in the fall a course of lectures on Religion in the English Poets before the Pacific Unitarian School for the Ministry. In June he delivered the Phi Beta Kappa address at the University of Kansas, on "The Heroisms of Peace," and two other addresses at the same institution. He has published sundry poems in various journals.

Professor Alden published a volume of "Essays, English and American," besides various reviews in *The Nation* and other journals. In April, on invitation of the University of Cincinnati, he gave a course of lectures on "Types of Modern Tragedy" on the Ropes Foundation for the Study of Comparative Literature; also a course on Shakespeare at the University of North Carolina; and briefer courses or single lectures and addresses at the University of Virginia, the University of Illinois, Indiana University, Smith College, Swarthmore College, and Girard College. In July and August he gave two courses as acting Professor of English at the Summer Session of Columbia University.

Professor Tatlock served as Assistant District Director of the Students' Army Training Corps; and as a member of the Council of the Association of American University Professors, and of the Simplified

Spelling Board. As Research Associate of the Carnegie Institution of Washington he is pushing rapidly forward the preparation of the Chaucer Concordance, with the help of Dr. Kennedy and of some forty volunteer collaborators.

Professor Bassett, in addition to a considerable number of public readings and lectures throughout California, served during the summer as Professor of Public Speaking at the University of Colorado.

Professor Gray was honored by receiving from his *alma mater*, Colgate University, the degree of Doctor of Letters at the June Commencement. He has published papers on "The Dumb Show in *Hamlet*," (*Mod. Philology*, May, 1919), and "'Titus Andronicus' Once More," (*Mod. Lang. Notes*, April, 1919).

The English department acknowledges the assistance of Professors H. C. Brown, P. A. Martin and E. E. Robinson of the departments of Philosophy and History in conducting the course in Free Reading.

WILLIAM HERBERT CARRUTH,
Professor of Comparative Literature.

ENTOMOLOGY AND BIONOMICS

The faculty of the department was composed of Vernon Lyman Kellogg, professor; Rennie Wilbur Doane, associate professor; Mary Isabel McCracken, assistant professor; Gordon Floyd Ferris, instructor.

The number of major students was ten, of whom two were graduates. Courses were given as shown in the accompanying table, with attendance as indicated:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
McCracken.....	1a. Elementary entomology	5	7	.....	.....	.....
Ferris.....	1b. Elementary entomology	5	.....	16	1	.....
McCracken.....	2. Classification	5	.....	.....	5	.....
McCracken.....	3. Insect ecology	5	.....	.....	2	5
McCracken.....	4. General entomology	3	12	.....	.....	.....
Doane.....	5. Insects and disease	3	16	.....	.....	.....
McCracken.....	6. Apiary	3	.....	.....	5	3
Doane.....	7. Economic entomology	3	1	.....	.....	.....
McCracken.....	11. Taxonomy .....	.....	2	.....	.....	1
McCracken, Doane.....	14. Advanced laboratory	1	2	2	2	.....
McCracken.....	16a. Genetics	2	.....	.....	6	.....
Totals			40	18	21	9

Professor Kellogg was absent on leave for the year, devoting his time to Food Administration work, and to work in connection with the National Research Council. A number of articles on these and other subjects written by Professor Kellogg have appeared in various magazines and journals.

Associate Professor Doane again devoted much of his time to Food Administration work, studying the insects infesting stored food products in California, Oregon and Washington, and recommending methods for controlling these pests. A paper on this work was read before the West Coast Association of Economic Entomologists, and later published in the *Journal of Economic Entomology*. As a member of the Board of Trustees for the Matadero Mosquito Abatement District, he devoted a good deal of time to directing the work of controlling the mosquitoes on the marshes and in the uplands in this district. The results of this work have been remarkably successful, as practically no mosquitoes were to be found in the district during the time when they have heretofore been very abundant and troublesome.

Assistant Professor McCracken has given much help to the beekeepers of this vicinity, helping several to establish apiaries and advising them as to the best methods of handling their bees.

Instructor Ferris spent the summer in 1919 in lower California making a collection of Coccidae, or scale insects, for our department, and also collecting crustaceans for the California Academy of Sciences. During the year he has published one paper on Coccidae in the University Series of publications, and seven other papers on Coccidae and aphids, in various entomological journals.

RENNIE WILBUR DOANE,
Associate Professor of Entomology
and Acting Executive.

GEOLOGY AND MINING

The department faculty for 1918-19 consisted of the following:

GEOLOGY

Bailey Willis (geology), and James Perrin Smith (paleontology), professors; Austin Flint Rogers (mineralogy), and Cyrus Fisher Tolman, Jr., (economic geology) associate professors; Eliot Blackwelder (acting professor of geology for the winter quarter 1919).

MINING AND METALLURGY

David Morrill Folsom (mining), professor; Waldemar Fenn Dietrich (mining), and Valentine Richard Garfias (petroleum technology), assistant professors; R. R. Goodrich, (acting professor of metallurgy for the spring quarter 1919).

Assistants: F. P. Vickery, fellow in geology; Philip Duryea, assistant in mineralogy; E. Pehrson, assistant in metallurgy; E. Erich, assistant in metallurgy.

Resignations: Mr. D. M. Folsom, Mr. V. R. Garfias, and Mr. H. W. Young have resigned to go into private work in mining. The department regrets the loss of these old and tried associates.

Promotions: Mr. A. F. Rogers and Mr. C. F. Tolman, Jr., to professorships in mineralogy and in economic geology respectively; Mr. W. F. Dietrich to associate professor of metallurgy.

Division of the Department: After 28 years of union, the Department of Geology and Mining will be divided, to take effect on September 1, 1919.

The Department of Geology, with Messrs. Smith, Rogers, Tolman, and Willis, will continue to give the undergraduate and graduate work in geology. It will also, in coöperation with the new Department of Mining and Metallurgy, give and direct the pre-mining courses necessary as preparation for the graduate work in mining.

The Department of Mining and Metallurgy, under the direction of Mr. Theodore J. Hoover, will begin work as a graduate school on October 1, 1919, with Mr. T. J. Hoover, professor of mining and metallurgy; Mr. J. M. Hyde, professor of metallurgy; Mr. W. F. Dietrich, associate professor of metallurgy; Mr. Carl H. Beal, assistant professor of petroleum technology.

Mr. Willis was absent from the University from April 1, 1918, to March 15, 1919, on government service connected with the "Inquiry" under Colonel House. He also visited a number of schools of mining to secure data for the course of study in mining.

Mr. Willis gave the following courses:

SPRING QUARTER, 1919:

	Attendance
Geography 1 (physical geography)	168
Geology 2 (excursions)	7
Geology 6 (regional geology of petroleum)	14

SUMMER QUARTER, 1919:

Geology 1 (elementary geology).....	9
Geography 1 (elementary geography).....	24

During the winter quarter 1919, Mr. Eliot Blackwelder, in the absence of Mr. Willis, was acting professor of geology, and gave the following courses:

	Attendance
Geology 1, (elementary)	120
Geology 1a, (laboratory)	63
Geology 3, (structural geology)	14

Mr. Smith gave the following courses:

Courses	Attendance		
	Autumn	Winter	Spring
Military geology under Civil Eng. 20, S. A. T. C.....	84		
Paleontology 1 (systematic paleontology)	10		
Paleontology 2 (historical geology)		14	
Paleontology 3 (historical geology)			35
Paleontology 4 (systematic conchology)	2		
Paleontology 5 (tertiary conchology of Cal.).....		2	
Paleontology 6 (paleontology of Cal.).....			1
Paleontology 7 (geology of Cal.)	2		
Paleontology 9 (geology of the Great Basin).....			17
Paleontology 10 (research)	1	3	8
Totals	99	19	61

During the summers of 1918 and 1919, Mr. Smith was engaged with Dr. Ralph Arnold in a study of the petroleum resources of Oklahoma. He has recently published in the Proceedings of the California Academy of Sciences, a paper on the "Climatic Relations of the Tertiary of California."

The courses in mineralogy were given by Mr. Rogers, assisted by Mr. Philip Duryea. The enrolment was as follows:

Courses	Attendance		
	Autumn	Winter	Spring
Mineralogy 1 (common minerals and rocks).....	2		38
Mineralogy 2 (crystallography)		4	
Mineralogy 3 (adv. mineralogy).....			7
Mineralogy 4 (petrography)	3		
Mineralogy 5 (research)		2	
Totals.....	5	6	45

Mr. Rogers has been engaged in revising his text-book, and has published a paper on some of the rare minerals of California. He has also completed the work on the quartz resources of California. He has been made associate editor of the American Mineralogist, a new magazine devoted to mineralogy.

Mr. Tolman devoted the autumn quarter of 1918, which should have been his vacation, to the work of teaching map interpretation to the S. A. T. C. The courses given by him were as follows:

Courses	Attendance			
	1918 Summer	1918 Autumn	1919 Winter	1919 Spring
S. A. T. C. (C. E. 20, map interpretation).....	.....	104	.....	.....
S. A. T. C. (C. E. 20, map reading).....	.....	47	.....	.....
Summer field geology (geol. 6).....	4	.....	.....	.....
Summer field topography (geol. 7).....	4	.....	.....	.....
Geology 1 (elementary geol.).....	16	.....	.....	.....
Economic geology 1 (non-metals) .....	.....	.....	14	.....
Economic geology 2 (metals) .....	.....	.....	.....	14
Economic geology 3 (research) .....	.....	.....	2	1
Economic geology 4 (research) .....	.....	.....	.....	2
Totals.....	24	151	16	17

Summer field work in geology (geology 7 and 6), enrolment 16

Mr. Tolman has made a study of the Boulder Batholith and its ore deposits in Idaho. He has also continued his work on the Foothills copper belt of California, and in connection with Mr. J. J. Beeson has resumed the study of secondary sulphide enrichment of ore bodies.

MINING AND METALLURGY

Research: In the metallurgy laboratory during the winter and spring quarters, a small blast furnace was installed for the purpose of performing experiments on pyritic smelting. The designing and installation of this furnace was largely in the hands of Mr. W. G. Perkins, a consulting metallurgist, who is at present registered for work in the department. It was not possible to prepare the furnace for operation until about the middle of the spring quarter, so that it was impossible to carry on the extensive set of experiments that was planned. The furnace, however, is in running order for any future set of experiments that may be attempted.

Outside Activities: During the summer quarter of 1918 Mr. W. F. Dietrich was appointed engineer of the oil division of the U. S. Food Administration under former Professor D. M. Folsom, and was engaged in various engineering problems connected with the work of that division. The most important work was in connection with the investigation of the feasibility of railroad electrification in California as a possible means of saving fuel oil.

Mr. V. R. Garfias during a portion of the fall and winter quarters assisted Dr. Ralph Arnold at Washington, D. C., on the Federal Commission for the valuation of oil lands.

Publications: W. F. Dietrich, "Mountain Railroad Electrification in California," a report to the director of the oil division of the U. S. Food administration, (abstract published in The Journal of Electricity, of San Francisco, November 1, 1918).

Classes: Mr. Garfias and Mr. Dietrich were on duty during the autumn and winter quarters. In the spring quarter Mr. R. R. Goodrich was appointed Acting Professor of Metallurgy, and has given the metallurgical courses. The work in mining was given by Mr. W. F. Dietrich during the spring quarter.

The record of the courses given during the four quarters beginning with the summer quarter 1918 is as follows:

Instructors	Courses	Units	Attendance		
			Autumn Quarter	Winter Quarter	Spring Quarter
Dietrich.....	Metallurgy 1	3	25	.....	.....
Dietrich.....	Metallurgy 3	4	.....	22	5
Dietrich.....	Metallurgy a	3-5	2	.....	.....
Dietrich.....	Metallurgy e	2-15	4	7	.....
Dietrich.....	Mining 2	3	.....	11	.....
Dietrich.....	Mining 3	3	.....	.....	5
Dietrich.....	Mining 4	3	.....	.....	15
Dietrich.....	Mining 10	3	.....	.....	7
Garfias.....	Mining 6	3	.....	5	.....
Garfias.....	Mining 10	3	.....	2	.....
Garfias.....	Mining 5 .....	.....	.....	7	.....
Garfias, Folsom.....	Mining 5 .....	.....	12	.....	.....
Goodrich.....	Metallurgy 5	3	.....	.....	10
Goodrich.....	Metallurgy a	3-5	.....	.....	9
Goodrich.....	Metallurgy e	2-15	.....	.....	6
Totals .....		.....	43	54	57

JAMES PERRIN SMITH,
Professor of Paleontology.

GERMANIC LANGUAGES

The department faculty for the year 1918-19 consisted of William Alpha Cooper, George Hempl, Karl Gustav Rendtorff, professors; Bruno Boezinger, Charlotte A. Knoch, assistant professors.

The following courses were given, with attendance as noted:

Instructors	Courses	Units	Attendance			
			First Quarte.	Second Quarter	Third Quarter	Fourth Quarter
Knoch.....	1, 2, 3. First year	5	22	21	18	.....
Boezinger, Knoch.....	21, 22, 23, 24. Second year	5	19	17	22	2
Boezinger, Knoch.....	25, 26, 27, 28. Scientific	3	21	29	28	10
Boezinger.....	31, 32, 33. Third-year drama	3	7	5	5	.....
Cooper.....	34, 35, 36. Third-year novel	3	6	6	7	.....
Knoch.....	37. Third-year reading	3	.....	.....	.....	6
Knoch.....	38, 39, 40. Third-year composi- tion	2	2	1	.....	.....
Boezinger.....	51. Advanced composition	1	1	3	3	.....
Cooper, Rendtorff.....	61. Directed reading	1-2	17	23	35	13
Boezinger, Rendtorff.....	62. Individual composition	1	.....	1	.....	.....
Cooper.....	63. Undergraduate thesis	1	2	.....	.....	.....
Cooper.....	73, 74. Goethe's life and works	3	12	7	.....	.....
Rendtorff.....	78. Schiller's lyrics and ballads	3	.....	.....	.....	2
Rendtorff.....	82. 19th century literature	3	.....	5	.....	.....
Rendtorff.....	85. Current literary movements	3	.....	.....	2	.....
Rendtorff.....	86. Development of the drama	3	.....	.....	.....	2
Knoch.....	101, 102. Conversation	2	3	1	.....	.....
Hempl.....	106. Modern language teaching	1	3	.....	.....	.....
Cooper.....	107. German teachers' course	2	.....	.....	5	.....
Boezinger.....	121. Gothic	2	2	.....	.....	.....
Rendtorff.....	124, 125. Middle High German	2	.....	1	1	.....
Hempl.....	131. Phonetics	2	3	.....	.....	.....
Hempl.....	132. Genesis of grammar	2	.....	.....	9	.....
Cooper, Rendtorff.....	151. Master's thesis	1-3	1	1	1	2
Totals			122	121	136	37

The total number of major students registered in the department was sixteen, of whom five were graduate students. The degree of Bachelor of Arts was conferred upon five students; the degree of Master of Arts was conferred upon Belle Bernice Ricker, who presented a thesis entitled "Goethe as a Lawyer."

The special library maintained as a part of the equipment of the department has grown rapidly since the last report and now numbers over 1400 volumes. Part of the increase has come through purchases with syllabus fees and part through gifts. From the library of the late Susie May Everson (A.B. 1915; A.M. 1916) about fifty volumes were donated. Miss Charlotte A. Knoch contributed a number of books, and a few duplicate textbooks were received from various students and graduates. The usefulness of this collection may be gathered from the fact that approximately a thousand loans were made from it to students in the course of the year, to say nothing of its service to the department staff and to the advanced students who had direct access to the books on the shelves.

WILLIAM ALPHA COOPER.
Professor of German.

GREEK

The department faculty for the year 1918-19 consisted of: Augustus Taber Murray, professor; Ruth A. Nethercut, assistant.

The following courses were given:

Instructors	Courses	Units	Attendance			
			Autumn Quarter	Winter Quarter	Spring Quarter	
Murray.....	No. 1	5	3	2	2	
Murray.....	No. 2	3-4		2	3	
Murray.....	No. 4	4	4		5	
Murray.....	No. 6	4		3		
Murray.....	No. 7	3	1			
Murray.....	No. 13	3-4			1	
Murray.....	No. 18	3	25			
Murray.....	No. 19	3		45		
Murray.....	No. 20	3			44	
Murray.....	No. 26	3		35		
Totals			33	87	55	

No courses in Greek were offered during the summer quarter.

Dr. E. W. Martin has been absent on leave throughout the year, engaged in Red Cross work in Greece. Until the closing of the work of State Food Administrator in February, Dr. Murray acted as Food Administrator for the Northern Unit of Santa Clara County.

AUGUSTUS TABER MURRAY,
Professor of Greek.

HISTORY

The faculty of the department for the year consisted of: Ephraim Douglass Adams, Arley Barthlow Show, Edward Krehbiel, Payson Jackson Treat, professors; Henry Lewin Cannon, Edgar Eugene Robinson, associate professors; Percy Alvin Martin, Yamato Ichihashi, assistant professors; Allen Marshall Kline, lecturer (spring quarter).

The graduate assistants during the year were: Frank Elliott Barrow, Margaret Elaine Bennett, Gladys Blanche Footman, William Henry Handley, Oscar Arvle Kinchen, Marguerite Moore, Mabel Parish, William Albert Vivian, Abraham Zvenigrad.

The Seabury Fellowship in World Politics was held by Marian Luverne Peek.

Mr. Allen M. Kline, Professor of History at the College of the Pacific, in the spring quarter gave History 21, the third quarter in American History, in the stead of Mr. Robinson.

During the period of the war Mr. Adams was chairman at Stanford University of the War Issues Course required by the War Department. He also served as chairman of a committee of five educators appointed by State Commissioner of Secondary Education, Mr. Wood, to examine history text-books used in the high schools with a view to the elimination of such books as were pro-German or were unduly critical of America's associates in the war. The report of this committee of five was made in October and in part was printed by Commissioner Wood as a State document.

Acting as director of the National Security League for the Pacific Coast, Mr. Adams in September 1918 arranged with the California State Board of Education to provide a special supervisor of courses dealing with the war and war issues for the seventh and eighth grades of the schools of California.

For the National Security League Mr. Adams organized an experiment in Civics education with President E. C. Moore of the Los Angeles State Normal School. This experiment is called the Los Angeles School for Patriotic Education and is being conducted in the regular work of the training school in connection with the Los Angeles State Normal School. Mr. Adams is a director of the Patriotic School. He has also continued to act as a director of the Lawrence Plan in Civics, an experiment similar to that of Los Angeles, being conducted in the Oliver School in the city of Lawrence, Massachusetts, through coöperation by the National Security League, the Massachusetts State Board of Education, the Lowell State Normal School and the City School System of Lawrence.

Mr. Adams has given several public lectures on the topic, "Great Britain, America and Democracy," at Burlingame before the Teachers' Association; before the Schoolmasters' Club, San Francisco; The Commonwealth Club of San Francisco; The Academy of Sciences in Golden Gate Park, and the Teachers' Institute of Napa County. This speech was published, February 1919, by the World Peace Foundation of Boston.

In May 1919, Mr. Adams went east on work to be outlined later.

Besides continuing in the capacities noted in previous reports, Mr. Show has written various public notices for the American Historical Review. He is also the President of the Santa Clara County Historical Society.

It is now permissible to record the confidential work of Mr. Krehbiel during the war. Early after its outbreak he was requested to follow and report on part of the foreign language press in California, a labor which continued until the act of Congress, requiring all articles relating to the war to be printed in English, took effect. From November 1917 to February 1918, he was in New York as an investigator with the Inquiry, more commonly known as the House Commission for the study of the terms of peace.

In his vacation quarter in the autumn, Mr. Krehbiel continued his service as Director of the Speakers' Bureau of the Food Administration for California. He was granted leave for the winter quarter to prepare the official Report of the Activities of the United States Food Administration for California for the General Staff History of the War, and to arrange the papers of the same for deposit in the Bancroft Library.

During October and November, 1918, Mr. Krehbiel for six weeks served as Director of the Third Home Service Institute of the American Red Cross in San Francisco; and in April and May 1919, he participated in establishing the connection between the University and the Public Health Hospital at Camp Fremont for the rehabilitation of invalid soldiers. He was Chairman of the Program Committee of the Eleventh Annual Conference at the California State Conference of Social Agencies held in San Jose, April 1919. He is the regional representative of the Survey of New York and the connecting link between the Survey Round Tables of San Francisco, Los Angeles and San Diego; and a member of the National Council of the League of Free Nations Association.

Since May, Mr. Krehbiel has been Chairman of the Committee on International Relations of the Commonwealth Club of San Francisco. He has given many lectures, among them a series on the "Fourteen Points" before the San Francisco Center, and others for the League to Enforce Peace, for which he compiled a comparative text of the original and revised drafts of the League of Nations Covenant. During the summer of 1919 he was on the faculty of the University of Southern California.

In Mr. Adams' absence, Mr. Krehbiel is acting executive of the department.

Mr. Treat carried on the weekly lectures, previously reported, at Camp Fremont in coöperation with the Y. M. C. A., and was also in charge of sections of the War Issues Course for the S. A. T. C. In a year of irregularity and disorganization in the university world it deserves to be noted that Mr. Treat served the department faithfully by meeting every class as scheduled throughout the year.

Through the death on January 5, 1919, of Associate Professor Henry Lewin Cannon the department and the historical profession suffered a genuine loss. Born in Ohio in 1871, Mr. Cannon received his baccalaureate at Western Reserve, in 1893. He continued his studies at Yale and Harvard Universities and attained the degree of Doctor of Philosophy at the University of Pennsylvania in 1898. His university teaching career began at the University of Cincinnati in 1900. In 1903 he came to the chair of English History in Stanford University.

Though not endowed with a robust constitution, Mr. Cannon always faithfully performed his duties. Undoubtedly he was at his best in graduate instruction and scholarly production. To the former the sentiments of his advanced students bear testimony; and of the latter his printed works are the witnesses.

Among his more notable historical productions are the Reading References for English History, 1910, and Royal Finances of the Reign of Henry III. His chief work, that to which he gave most of himself and which he indefatigably prosecuted for years at home and abroad, was devoted to an extension of one of the Pipe Rolls. It is gratifying that his labor on this was finished at the time of his death. The work appeared posthumously in 1919 from the Yale University Press under the title "The Great Roll of the Pipe for the 26th Year of the Reign of King Henry III, A. D. 1241-1242."

In September 1918 Mr. Robinson was appointed Assistant to the District Educational Director, Dr. Ray Lyman Wilbur, of District No 11, of the S. A. T. C. Later he was transferred by the War Department to District No. 12, to serve as Assistant Educational Director, with headquarters at Helena, Montana.

Continuing his service as Chairman of the International Relations Committee of the Commonwealth Club of San Francisco to May 1919, Mr. Robinson arranged a public meeting for the discussion of the proposed Covenant of the League of Nations. He has also continued to administer the Borel Fund for the department.

Being relieved of a portion of his academic work for the spring quarter, Mr. Robinson acting for the department and in connection with the Committee on War Information, completed the preliminary survey of materials for the Stanford history of the war.

Mr. Robinson has also given numerous public lectures and commencement addresses. Though entitled to leave for the summer quarter, Mr. Robinson, in view of Mr. Adams's absence, consented to teach during the summer and take his vacation at a later date.

On leave during the summer and autumn of 1918, Mr. Martin continued his work with the E. L. Doheny Research Commission on Mexican Institutions, which aims to publish two studies of a general character and a series of monographs on special topics designed to aid in the solution of the Mexican problem. From August to December 1918, he held the position of chairman of the editorial board. The first important publication of the Commission, consisting of an exposition of the Mexican question accompanied by voluminous appendices, will appear late in 1919.

During the year Mr. Martin gave a number of addresses on the War with special reference to Latin America. At the instance of the Committee on Education and Special Training of the War Plans' Division of the War Department, he prepared a 10,000-word article on Latin America and the War, which has since been printed by the World Peace Foundation.

With the winter quarter Mr. Martin resumed teaching at the University. In the spring he was advanced to an associate professorship.

Mr. Ichihashi has during the year been doing significant work in Americanization among the Japanese of California.

The department has continued collecting printed materials on the Great War. As previously, the Borel Fund has proven of high value to the department for the collection of original materials relating to California. The private papers of the late James Otey Bradford, which deal with the history of the Wells Fargo Express Company in the State, have been added to the collection as a gift of Miss Harriet Bradford. Homer Mitchell, a former student of the University, has donated a scrap book and political materials relating to the history of Oregon.

The Seabury Fellowship in World Politics has been renewed for the year 1919-20 by Misses Mary and Helen Seabury, of New Bedford, Mass. Mr. Geroid Robinson, who, as was noted in last year's report, held the fellowship for one month before going into military service, has returned the stipend of thirty dollars for that period to the Library, for the purchase of books relating to International Politics at the direction of Mr. Krehbiel.

During the year the department received "The Western Spy and Miami Gazette" from July 29, 1806, to August 6, 1808, published in Cincinnati, as a gift from Mrs. L. M. Ritchie of Salt Lake City.

The number of major students registered in the department was: Autumn quarter, undergraduates 90, graduates 6; winter quarter, undergraduates 80, graduates 7; spring quarter, undergraduates 84, graduates, 6; summer quarter, undergraduates 14, graduates 8.

The Master of Arts Degree was conferred in June 1919 upon: Flora May Preston, thesis, "The Congressional Career of Jonathan P. Dolliver"; Edith Clark Sloan, thesis, "The Foreign Policy of the Republican Party"; Abraham Zvenigrad, thesis, "The Matamoras Trade During the Civil War."

The courses noted in the accompanying table were given, with the attendance as indicated:

Instructors	Courses		Unit Hours	Attend- ance
	Autumn Quarter			
Adams.....		War issues	3	52
Treat.....		War issues	3	94
Show.....	10.	European history, 395-1300.....	5	51
Cannon.....	16.	English history to 1485.....	4	60
Adams.....	22.	American history, 1789-1848	5	40
Ichihashi.....	31.	History of Japan to 1600.....	4	12
Show.....	76.	German constitutional history	3	4
Treat.....	92.	Governments of the Far East.....	3	7
Show.....	105.	Seminar in mediaeval history.....	3	8
Cannon.....	110.	Seminar in English history	3	8
Ichihashi.....	128.	Seminar in Japanese history.....	3	2
Various.....		Theses	Various	5
Total				337

Instructors	Courses Winter Quarter	Unit Hours	Attend- ance
Robinson.....	7. War issues	3	90
Martin.....	11. European history, 1300-1648.....	5	78
Adams.....	23. American history, 1848-1915.....	5	66
Treat.....	27. The Far East	5	62
Ichihashi.....	32. History of early modern Japan, 1600- 1854	4	8
Martin.....	37. History of South America since 1823...	5	43
Robinson.....	62. History of the West.....	3	18
Adams.....	88. American diplomatic relations	3	13
Treat.....	93. Research	3	2
Robinson.....	113. Seminar in the history of the West.....	3	12
Treat.....	125. Seminar in the history of the Far East	3	2
Ichihashi.....	128. Seminar in Japanese history.....	3	3
Various.....	Theses	Various	
Total			399

Instructors	Courses Spring Quarter	Unit Hours	Attend- ance
Martin.....	1. Historical training course	5	36
Krehbiel.....	12. Europe since 1648	5	222
Kline.....	21. American history, 1607-1789.....	5	57
Treat.....	28. The Far East	5	96
Show.....	50. The Italian Renaissance	3	12
Ichihashi.....	68. Modern Japan since 1854.....	3	11
Martin.....	70. History of Mexico and California.....	3	17
Show.....	102. Principles and methods of history teaching	3	11
Krehbiel.....	107. Seminar in modern European history.....	3	14
Robinson.....	113. Seminar in the history of the West.....	3	12
Treat.....	125. Seminar in the history of the Far East	3	2
Ichihashi.....	128. Seminar in Japanese history.....	3	2
Various.....	Theses	Various	
Total			492

Instructors	Courses Summer Quarter	Unit Hours	Attend- ance
Show.....	13. European history, 395-1300.....	5	11
Robinson.....	25. American history, 1848-1918	5	32
Martin.....	38. History of Latin America.....	4	13
Martin.....	72. Latin-American institutions	3	10
Show.....	102. Principles and methods of history teaching	3	6
Robinson.....	120. Seminar in American diplomatic history	3	7
Various.....	140. Graduate work	Various	4
Total			83

Total enrolment in four quarters, 1,311.

EPHRAIM DOUGLASS ADAMS,
Professor of History.

HOPKINS MARINE STATION

The faculty of the department for the summer quarter consisted of Walter Kenrick Fisher, director; Harold Heath and Edwin Chapin Starks of the Department of Zoology; Ernest Gale Martin and Frank Walter Weymouth of the Department of Physiology, and James Ira Wilson McMurphy of the Department of Botany.

During the academic year Mr. Fisher was engaged in organizing the equipment, library, and museum of the station. He spent part of the autumn quarter in teaching at the University, and saw through the press a government report on the sea-stars of Philippine seas and adjacent waters. A daily record of oceanic temperatures and salinities, badly needed for Monterey Bay, has been carried on.

During the summer quarter Mr. Heath has continued investigations on the embryology of chitons, a group of mollusks.

Mr. Martin was engaged in completing a report, for the United States Public Health Service, on Industrial Fatigue.

Mr. Weymouth investigated the distribution and life histories of edible bivalve mollusks as a continuation of a survey of the State begun during the spring quarter under the auspices of the State Fish and Game Commission.

Miss Helen Lucile Williamson, graduate assistant in Physiology, completed work on a thesis entitled, "A Statistical Study of Muscular Strength and Symmetry in Children."

Mr. McMurphy has been making a survey of the hill flora of the Monterey Peninsula for comparison with that of the Mendocino Plains, two similar plant associations widely separated in the same general life zone.

During the autumn quarter of 1918 Miss Olive M. Willoughby, a graduate student in Zoology, studied the barnacles of Monterey Bay and prepared a report on the results of her work.

From February 15th to August 30th, Mr. Rollin G. Myers, assistant professor of chemistry in Tulane University, investigated, under the auspices of the Department of Chemistry of Stanford University, the chemistry of the blood of a number of representative marine invertebrates as well as of two species of whales. The results of this work, in a practically new field, present features of great interest.

Miss Caroline B. Thompson, Professor of Zoology in Wellesley College, spent most of the spring quarter studying castes among the species of termites found on the Monterey Peninsula. Miss Thompson's problem is the origin of castes.

The classes and enrolment for the summer quarter are given in the accompanying table:

Instructors	Courses	Unit Hours	Attend- ance
Starks.....	1. General zoology	5	6
Fisher.....	2. Classification and ecology of marine invertebrates	5	3
Heath.....	3. Economic zoology	5	9
Heath.....	4. Invertebrate embryology	3	1
Starks.....	5. Fishes	2	1
Fisher.....	6. Research	5-7	2
Heath.....	6. Research	3	1
Martin, Weymouth, Williamson.....	7. General physiology	5	9
McMurphy.....	9. Algae	5	6
The Staff.....	Seminar		14
Total			52

WALTER KENRICK FISHER,
Director.

LATIN

For the year 1918-1919, the teaching staff of the department consisted of Jefferson Elmore and Benjamin Oliver Foster, associate professors; Frank H. Fowler, acting associate professor; Mildred Hanna, teaching assistant.

Professor Fairclough, who was granted leave in June, 1918, to enable him to engage in Red Cross work, was absent through the year. During the earlier period of his service he was stationed at Berne, where, among other duties, he was employed in superintending the repatriation of civilians of Italian, Belgian, and other nationalities. In the spring, he was placed in charge, with the rank of major, of the activities of the American Red Cross in Montenegro. Professor Foster was also absent during the autumn quarter, continuing his work in the Bureau of War Trade Intelligence at Washington.

To assist in carrying on the work of the department during the absence of these men, Dr. Frank H. Fowler was appointed acting associate professor for the autumn quarter and conducted courses in the Satires of Horace, Roman Comedy; and Roman Art and Archæology. Again, in the summer quarter, when Professor Elmore left the University to travel and study for a period of three quarters, the department was so fortunate as to obtain the services of Dr. Fowler, who gave three courses in that session.

Miss Mildred Hanna, A. M. 1918, held the teaching assistantship during the year.

The attendance in the summer, while small, was gratifying in one respect: three of the four graduate students were teachers, who with this quarter's work completed the requirements for the master's degree; the other was a graduate of 1918, who had received an appointment to teach, and improved the opportunity to enlarge her knowledge of Latin and Spanish in preparation for the autumn opening of school. It seems

likely that the department will find that there is a growing demand for instruction in the summer quarter on the part of teachers who wish to increase their professional efficiency, and work toward the master's or doctor's degree, but are debarred from the advantages of university study except in the long vacation.

The following table shows the courses given during the year:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Hanna.....	1a. Cicero	4	2			
Hanna.....	1b. Virgil's Aeneid	4		3		
Fowler.....	1c. Ovid	3				5
Elmore.....	3. Cicero and Terence	3	4			
Foster.....	4. Catullus and Horace	3		2		
Foster.....	4a. Bucolics and Georgics	3			5	
Elmore.....	6. Composition	2	4	7	8	
Fowler.....	7. Horace, Satires	4	1			
Elmore.....	8. Tacitus	3		3		
Elmore.....	8a. Seneca and Pliny	3			3	
Foster.....	9. Oral Latin	2			6	3
Fowler.....	10. Comedy	4	6			
Foster.....	11. Cicero's letters	4		3		
Elmore.....	14. Juvenal and Martial	3	3			
Elmore.....	17. Teachers' course	2 (or 3)			6	
Foster.....	22. Seminary in Caesar	4			2	
Elmore.....	22a. Seminary in Virgil	4	2			
Foster.....	22b. Seminary in Elegy	4				3
Foster.....	22c. Thesis	5				3
Fowler.....	24a. Syntax	3				4
Foster.....	25. Palaeography	2		2		
Elmore.....	29. Roman history	3			21	
Fowler.....	31a. Art and archaeology	2	19			9
Foster.....	32. Literature in translation	2				5
Elmore.....	37. Roman civilization			6		
Foster.....	40. Elegy	3		5		
Foster.....	41. Petronius and Apuleius	3			3	
Totals			41	31	54	32

BENJAMIN OLIVER FOSTER,
Associate Professor of Latin.

LAW

The faculty of the Law School consisted of Charles Andrews Huston, professor and dean; Arthur Martin Cathcart, Joseph Walter Bingham, Clarke Butler Whittier, Chester Garfield Vernier, Marion Rice Kirkwood, professors; Thomas Armitage Larremore, William Campbell Dalzell, instructors; Henrie Granville Hill of the San Jose bar, Oscar Kennedy Cushing of the San Francisco bar, lecturers.

The courses of instruction given and the enrolment in each are given in the accompanying table:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Kirkwood.....	1. Introductory	4	.....	.....	83	.....
Whittier.....	2. Contracts	5-4	.....	53	46	.....
Cathcart.....	3. Torts	5-3	.....	43	48	.....
Cathcart.....	3a. Torts I	3½	.....	.....	.....	21
Vernier.....	4. Crimes	6	7	.....	.....	.....
Kirkwood.....	5. Property	7-3½	12	.....	.....	20
Huston.....	6. Agency	6-4	.....	.....	33	6
Whittier.....	7. Military law—Section I	3	50	.....	.....	.....
Vernier.....	7. Military law—Section II	3	35	.....	.....	.....
Whittier.....	7. Military law—Section III	3	54	.....	.....	.....
Vernier.....	8. Personal property	3	.....	30	.....	.....
Cathcart.....	10. Constitutional law	5	11	.....	.....	.....
Huston.....	14. Public international law.....	2-2-4	23	26	.....	23
Bingham.....	15. Private international law.....	3-4-7	.....	.....	.....	19
Kirkwood.....	21. Rights in land of another	3	.....	9	.....	.....
Bingham.....	22. Wills	4	.....	.....	16	.....
Bingham.....	24. Water rights	4	.....	.....	16	.....
Cathcart.....	27. Quasi contracts	4	.....	.....	22	.....
Vernier.....	31. Bills and notes	6	.....	.....	13	.....
Dalzell.....	32. Partnership	4	.....	.....	5	.....
Huston.....	33. Private corporations	3-4	6	8	.....	.....
Dalzell.....	36. Mortgages	4	.....	.....	.....	29
Kirkwood.....	37. Equity I	5	.....	22	.....	.....
Vernier.....	38. Trusts	6	.....	8	.....	.....
Dalzell.....	40. Damages	4-4	.....	12	.....	32
Cathcart.....	43. Code pleading	3	7	.....	.....	.....
Whittier.....	44. Evidence I	3-4	.....	9	14	.....
Whittier.....	45. Evidence II	3	4	.....	.....	.....
Hill.....	46. California practice I	2-2	3	8	.....	.....
Hill.....	47. California practice II	2	.....	.....	12	.....
Dalzell.....	49. Business law	3	.....	50	24	.....
Totals			212	278	332	150

Mr. Huston returned from Washington and resumed his work at the beginning of the academic year. Mr. Bingham continued as Assistant Director of the Bureau of War Trade Intelligence until December, and, after a vacation extending through the winter quarter, resumed his work in the spring quarter. Mr. Larremore was absent on leave until the spring quarter, when at the request of President Campbell of the University of Oregon he was released from his engagement as instructor in Stanford University and accepted appointment as professor of law at the University of Oregon. Mr. Dalzell was on vacation during the fall quarter and has taught during the winter, spring, and summer quarters. During the summer quarter Messrs. Cathcart and Kirkwood were employed for a term of extra teaching, and work throughout the quarter was carried on by Messrs. Bingham, Dalzell, and Huston.

The registration of students in the Law School was 278, of whom 55 were graduate students, 218 were undergraduate, and 5 unclassified. Owing to the return of a number of students from military and naval

service, who had been previously registered in the pre-legal department and who were therefore permitted to continue in that category, there has been a registration in the pre-legal curriculum, exclusive of students counted in the Law School, of 57. The total registration, including both law and pre-legal students, was 335. The attendance of regular law students was very small during the autumn quarter for quite obvious reasons, but it gradually increased during the winter and spring quarters.

During the autumn quarter the presence of the S. A. T. C. in the University and the necessity of providing instruction in military law and in international law for those S. A. T. C. students in Age-Group 1, laid heavy demands upon the Law School, which were met by the organization of three sections in military law and practice, two of which were conducted by Mr. Whittier and the third by Mr. Vernier; and a single section in international law conducted by Mr. Huston.

The needs of other departments of the University, particularly the Department of Economics, led the Law School to offer as a non-professional course open to students in other departments than law, a course in business law, which was conducted through the winter and spring quarters by Mr. Dalzell.

The very considerable increase in attendance in the summer quarter over the corresponding quarter of last year is a noteworthy feature of the work of the past year, and the testimony of the members of the faculty, who have taught during the summer, is to the effect that the amount and quality of work of the students during this quarter indicate that the provision of a fourth quarter whereby students may shorten the period of preparation for practice has been a great service rendered by the University at a point where it was much needed. Adequate financial provision for the additional service needed in the fourth quarter would clearly be justified.

The adoption by the State of California of a requirement of three years of professional study as a prerequisite for admission to the bar examination, now required of all students seeking admission to practice, received the hearty endorsement of the faculty of the Law School. Professor Cathcart was a member of the Committee on Legal Education of the State Bar Association, a committee which was largely instrumental in securing this notable legislative advance.

During the year Mr. Whittier and Mr. Dalzell have carried on the legal aid bureau under the auspices of the American Red Cross, for the enlisted men, first at Camp Fremont, and, since the abandonment of the Camp, for the men at the Base Hospital.

Mr. Cathcart has been a member of the City Council of Palo Alto. Mr. Cathcart, Mr. Kirkwood and Mr. Huston have delivered addresses to men in the service at the Base Hospital and elsewhere, and Mr. Cathcart and Mr. Huston have given addresses at various meetings on the legal aspects of the League of Nations and the Peace Treaty.

CHARLES ANDREWS HUSTON,
Professor of Law, and
Dean of the Law School.

MATHEMATICS

The instructing body for the first three quarters was composed of Robert Edgar Allardice and Rufus Lot Green, professors; and Arthur Walter, P. B. Westerman, Mrs. S. G. Hackley and Miss Annie L. Wright, teaching assistants. Dr. Manning of the department of Applied Mathematics gave some special courses. During the summer quarter the instructing body was composed of Hans Frederik Blichfeldt, professor, and H. W. Brinkmann, teaching assistant.

The program of work was as follows:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Walter.....	1. Trigonometry	3	58	.....	.....	.....
Hackley.....	1. Trigonometry	3	64	.....	.....	.....
Westermann.....	1. Trigonometry	3	33	16	.....	.....
Wright.....	1. Trigonometry	5, 3	19	24	.....	.....
Brinkmann.....	1. Trigonometry	5	.....	.....	.....	11
Walter.....	2. Solid geometry	3	.....	16	.....	.....
Green.....	3. Algebra	5	46	20	.....	.....
Green.....	4. Coord. geometry	5	.....	.....	16	.....
Blichfeldt.....	4. Coord. geometry	4	.....	.....	.....	4
Green.....	5. Coord. geometry	5	20	.....	.....	.....
Green.....	5a. Adv. coord. geom.....	5	.....	4	.....	.....
Allardice, Brinkmann.....	6. Calculus	5	.....	15	13	2
Walter, Westerman.....	7. General course	3, 5	64	40	22	.....
Allardice.....	10. Adv. calculus	5, 3	6	.....	.....	.....
Allardice.....	11. Diff. equations	5	.....	.....	9	.....
Blichfeldt.....	11. Diff. equations	4	.....	.....	.....	5
Blichfeldt.....	15. Algebra	4	.....	.....	.....	4
Green.....	19. Modern cond. geom.....	5	.....	4	.....	.....
Allardice.....	20. Insurance	5	6	.....	.....	.....
Green.....	20a. Adv. algebra	5	.....	7	.....	.....
Allardice.....	21. Projective geom.....	5	.....	9	.....	.....
Allardice, Blichfeldt.....	23. Reading courses	3, 4	3	4	2	4
Manning.....	27. Prime numbers	4, 3	1	1	.....	.....
Manning.....	28. Groups	2, 3	.....	3	3	.....
Allardice.....	Theses	2, 5	.....	2	2	.....
Totals			320	165	67	30

ROBERT EDGAR ALLARDICE,
Professor of Mathematics.

MECHANICAL ENGINEERING

The teaching force in the department for the year 1918-19 was as follows: William Frederick Durand, professor of mechanical engineering for the spring quarter only; Guido Hugo Marx, professor of machine design; William Rankine Eckart, professor of experimental engineering; Everett Parker Lesley, associate professor of industrial engineering; Charles Norman Cross, assistant professor of experimental engineering; Lawrence Edminster Cutter, assistant professor of drawing; Horatio Stebbins, assistant professor of mechanical engineering; Edward John Stanley, instructor in pattern-making; James Bennett Liggett, instructor in foundry; Theron James Palmateer, instructor in machine shop; Robert Henry Harcourt, instructor in forge shop. •

Professor Durand was absent on war service during the fall and winter quarters of the year and during this period Professor Marx acted as executive head of the department.

The new aerodynamic laboratory was completed during the year and work was begun on a continuation of the program of experimental research on air propellers which has been carried on during recent years for the National Advisory Committee for Aeronautics. This work is under the immediate charge of Professor Lesley, with Professor Durand acting in a general advisory capacity.

The number of students in the spring quarter showed a marked increase, especially in the advanced classes, over the numbers for the earlier quarters of the year. This increase was due primarily to the mustering out of military forces and the return of students from military camps and from abroad to take up again their university work.

During the first quarter of the year the work of the department was carried out under the S. A. T. C. conditions, involving much difficulty and many readjustments in the attempt to correlate effectively the military and engineering sides of the training. The winter quarter served as a period of transition from the conditions of the S. A. T. C. program to normal university work, a transition which was more fully realized during the spring quarter with an increased number of students in advanced courses.

There seems to be every reason to anticipate, with the fall quarter of 1919, a substantial return to normal conditions, and with only such held-over effects of the war and of the military period as involve matters of individual adjustment.

During the summer quarter the department has offered courses in shop work which have been only moderately attended, the students taking such work being mostly regular students who desire to make up or to get ahead in this subject; together with a few teachers from the schools of the state where shop work courses are given.

It does not seem easy, with the closely articulated curriculum of an engineering course, to provide, without an increase in personnel, for any considerable program of summer work, since such widening of program would involve either continuous work throughout the year, with a repeti-

tion of courses given at other times, or else the omission of such courses at such times as they seem best to fit in as a part of the curriculum as a whole. It is, indeed, by an arrangement of this character for shop-work, keeping three shops open for the four quarters instead of four shops for three quarters, that the department is able to offer, without change in personnel, a continuous program of shop work for the four quarters of the year.

In general the work of the year has been carried out loyally and effectively, having in view the difficult conditions imposed by the S. A. T. C. and by the transition period back to normal university work.

The courses given and numbers in attendance are shown in tabular form as follows:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Durand.....	A. Lecture and special	1	.....	.....	54	.....
Marx, G. H.....	A. Lecture and special	1	.....	58	.....	.....
Harcourt.....	1. Lecture and shop	4	20	.....	48	.....
Liggett.....	3. Lecture and shop	4	.....	51	14	7
Stanley.....	5, 6a, 6b. Lecture and shop	1-3	22	47	61	.....
Palmateer.....	7, 8. Lecture and shop	3-4	6	22	.....	20
Marx, G. H.....	9. Lecture and shop	2	2	.....	.....	.....
Lesley.....	10. Shop administration	4	.....	6	.....	.....
Cutter.....	11. Drawing	3	.....	44	43	.....
Marx, G. H.....	11a. Drawing	3	3	.....	.....	.....
Cutter.....	12. Lecture and lab.....	3	.....	47	58	.....
Marx, G. H.....	13a. Lecture and recitation	3	.....	40	40	.....
Marx, G. H.....	13b. Drawing	1	.....	40	40	.....
Marx, G. H.....	Thesis	3-9	1	1	4	.....
Marx, G. H.....	14. Lecture and drawing	2-4	12	14	10	.....
Cross.....	21. Lecture and lab.....	3	22	.....	22	.....
Cross.....	22. Lecture and lab.....	2	22	12	.....	.....
Cross.....	23. Lecture and lab.....	3	.....	14	19	.....
Eckart.....	24. Lecture and lab.....	3	14	.....	.....	.....
Eckart.....	25. Lecture and lab.....	3	.....	5	.....	.....
Lesley.....	28. Lecture and lab.....	2	2	.....	.....	.....
Cross.....	30. Lecture and lab.....	5	.....	1	.....	.....
Eckart.....	30. Lecture and lab.....	2-5	.....	.....	5	1
Lesley.....	31. Lecture and special	3	10	.....	10	.....
Stebbins.....	32. Lecture and office work.....	4	34	.....	.....	.....
Stebbins.....	32a. Lecture and office work.....	5	.....	.....	20	.....
Stebbins.....	33. Lecture and office work.....	4	.....	23	.....	.....
Durand.....	34. Lecture	4	.....	.....	17	.....
Stebbins.....	35. Lecture	3	4	.....	.....	.....
Eckart.....	35b. Lecture	5	.....	.....	10	.....
Stebbins.....	36. Lecture	3	.....	16	.....	.....
Totals			174	441	475	28

WILLIAM FREDERICK DURAND,
Professor of Mechanical Engineering.

MEDICAL SCHOOL

The registration of medical students for the year was as follows: First-year students, 25; second-year students, 31; third-year students, 15; fourth-year students, 22; fifth-year (interne) students, 15; total 108. Sixteen students (fifteen men and one woman) were granted the degree of doctor of medicine during the year. Twenty-seven special workers were registered during the year.

The attendance in the Out-Patient Clinics was as follows: New patients, 11,432; old patients, 51,661; total number of visits, 68,726.

The Popular Medical Lectures for 1919 were delivered by: Mr. A. J. Pillsbury, Sr., of the California State Industrial Accident Commission; Professor M. Jaffa, of the University of California; Dr. Lewis Michelson, of the California State Board of Health; Dr. Philip Hale Pierson, member of the Stanford Medical Faculty; Dr. Adelaide Brown, of the Children's Hospital; Dr. William C. Hassler, of the San Francisco Board of Health.

The Jordan Medical Scholars for the year were E. F. Roth and L. R. Thompson.

Practically all the members of the Medical School Staff who were on leave in military service have now returned and resumed their duties at the Medical School.

Through the war the Medical School suffered the loss of one of its most loyal and efficient members, Dr. S. O. Beasley, formerly Assistant Clinical Professor of Obstetrics and Gynecology. Dr. Beasley was a Major in the Medical Corps of the Army and was one of the first to be called into active service upon the entrance of this country into war. He met his death on October 14, 1918, while rescuing wounded under heavy fire on the Western Front.

During the year the San Francisco Polyclinic amalgamated its service at the San Francisco Hospital with that of the Medical School. In connection with this arrangement the Medical School took over the Polyclinic Colloquia, a series of weekly clinics in medicine and surgery at the San Francisco Hospital. These Colloquia are given on Thursdays and Fridays by the combined visiting staff of the San Francisco Polyclinic and the Medical School and are open to graduates in medicine as well as to medical students. In addition, there are offered at the Medical School daily mid-day clinics in medicine and the medical specialties, surgery and the surgical specialties, pathology, obstetrics and gynecology, which are likewise open to the members of the profession.

The Medical School was granted an appropriation of \$7200 by the United States Interdepartmental Social Hygiene Board for the promotion of research in venereal diseases. This work is well under way and is in charge of Drs. Rigdon of the Genito-Urinary Department, A. B. Spalding of the Division of Obstetrics and Gynecology, H. G. Mehrtens, of the Neurological Clinic, and H. E. Alderson, of the Skin Clinic.

Professor Alonzo E. Taylor, of the University of Pennsylvania, has been appointed Lane Medical Lecturer for 1919. Dr. Taylor has been connected with the Food Administration and other commissions and has made a special study of food conditions in the European countries. His lectures will deal with his experiences along this line.

During the past year the San Francisco Maternity, which has for several years been generously contributing toward the support of the Out-Patient Obstetrics, has combined with the Auxiliary to the Stanford Clinics. The organization is now known as the Stanford Clinics Auxiliary and San Francisco Maternity. It will devote itself, as in the past, toward furthering the work of the Social Service Department in connection with all the Clinics of the Medical School.

WILLIAM OPHÜLS,
Dean.

LANE HOSPITAL AND STANFORD UNIVERSITY HOSPITAL

During the year 1918-19 both hospitals have shown steady progress in the gradually increasing number of patients treated, in the improvement of facilities and in the solving of hospital problems.

CENSUS

There was a total of 79,935 patient days: Stanford showing 28,849 and Lane, 51,086 patient days. They were divided as follows:

	Patient Days		Patients Admitted		Average Per Day	
STANFORD—						
Rooms	16,295		1,336		45.10	
Wards	11,343		1,175		31.07	
Infants	1,211	28,849	100	2,611	3.30	79.47
LANE—						
Private	15,038		1,204		41.20	
Medical clinic	9,470					
Surgical clinic	10,147					
Gynecological clinic	3,532		4,337		98.70	
Obstetric clinic	4,007					
Infants	3,762					
Children's wd. (cl. and pr.).....	5,120	51,086	4,541			139.90
Totals	79,935		8,152			219.30

GENERAL STATISTICS

House physicians, 2; senior internes, 6; junior internes, 9; daily average number of employes, 160.8; number of operations, 3494; number of X-ray plates taken, 9235; number of electrotherapy treatments, 2093; number of hydrotherapy treatments, 4719.

ALTERATIONS AND IMPROVEMENTS

In Lane Hospital two new electric elevators have been installed in place of the old hydraulic rams which had become obsolete and were working very unsatisfactorily. This installation will not only result in a considerable saving in water and electric power but will provide much needed storage space in the basement, formerly occupied by surge tanks, motors and other machinery.

A large skylight has been placed on the roof of the culinary department which not only improves the ventilation of the kitchens but controls the odor of cooking which formerly invaded one of the Stanford University Hospital corridors.

In the laundry a large-size wringer, collar and cuff ironer, new washer and two steam presses have been added, made necessary by the increasing number of patients. A study is at present being made of methods of softening water in their relation to economy of laundry work, and also in their relation to the working of our hot water system. The hardness of our water supply is a source of much trouble, not only in the large amount of soap consumed but also in the frequent blockading of sterilizers and stills from lime precipitate.

In Stanford University Hospital the most important structural improvement was the addition of 26 more rooms. Two floors of the new hospital had been left unfinished until such time as demands for accommodations should warrant their completion. The original plan was to use the uncompleted space for ward beds but experience showed that rooms were in much greater demand than wards and the plans were changed accordingly. The new rooms filled up at once and have proven very popular as they are large and quiet.

Plans have been drawn and approved for a roof garden which, if carried out, will add greatly to the attractions of the hospital. The view of mountains, ocean and bay from the roof is one of the finest in the city, and it is hoped that this improvement will materialize during the coming year.

STAFF

The disruption of the attending staff, due to war conditions, began to mend soon after the armistice. At present all the former members have reported back with the exception of one whose life was sacrificed in the great cause—Dr. Shadworth Beasley, strong, physically, mentally, morally, who has been one of our most valued staff members ever since his graduation from Cooper Medical College in 1898, except during the time of his service in the Spanish-American war where he received Congressional mention for unusual bravery. In the great war he also received the Distinguished Service Cross.

Dr. H. G. Mehrtens continued to serve as resident physician, assisted by Dr. R. L. Draper. During the year the Clinical Committee created the position of second assistant house physician. Dr. W. H. Moore was appointed first incumbent. For the coming year he is to be succeeded by Dr. Rea E. Ashley.

INTERNES

The Senior Internes for the year were Dorothy A. Wood in Medicine, R. A. Ostroff in Surgery, and T. A. Card in Obstetrics and Gynecology.

The Junior Internes were O. F. Johnson, G. D. Kelker, K. J. Kitagawa, W. H. Moore, A. V. Pettit and A. L. Teeter.

DEPARTMENTS

The Radium department is the latest addition to the hospital. Through the kindness of Mr. and Mrs. W. M. Fitzhugh, 100 milligrams have been presented to the Medical School. The Clinical Committee has worked out the necessary rules and regulations governing its use. The supervision of the care and use has been placed for the present in charge of the X-Ray department.

The Operating rooms, X-Ray, Hydrotherapeutic and Electrotherapeutic services have all shown satisfactory progress. Under general statistics, previously given, will be found the figures representing the work done. The Electrotherapeutic department is at present accommodated in the Hydrotherapeutic quarters, in accordance with the original plan. The work, however, has entirely outgrown its accommodations and the space occupied is now needed for the increasing work of Hydrotherapy. The Clinical Committee has under consideration plans for moving Electrotherapy to rooms adjacent to the Zander room. This change should be made as soon as possible.

DIET DEPARTMENT

This department has continued in full charge of Miss Lottie B. Sloan. She has been ably assisted by Miss Calderwood and another assistant dietitian, and A. Bogler, chef. Her force consists of a total of 40 employees. In addition she supervises the instruction of 13 pupil nurses, aiding in the preparation of diets.

The food service in both hospitals is very satisfactory. In Stanford the private-room trays are particularly successful, judging from the many commendations and small number of complaints received from patients.

An innovation, introduced during the past year, is the organizing of a Nourishment Kitchen. Formerly it was the custom to provide between-meal nourishments at the various service or ward kitchens. This required that each kitchen be stocked with necessary trays, dishes and food, and the ward nurses or special nurses prepared the food. The result was frequent complaints of indifferent service and poor cooking, generally where the service depended on outside nurses on special duty. Furthermore much food was wasted or surreptitiously consumed. With the present arrangement, all orders for between-meal nourishments are filled by an expert in a kitchen specially equipped with the necessary trays, dishes, paper napkins, machine shakers, extractors, etc. The result is uniform excellence in service and cooking, with marked economy in the amount of food consumed.

STORE ROOM

This department is in charge of Mr. E. L. Slack as store-keeper, with Miss Henrietta Suter as requisition clerk and aided by two delivery clerks. It performs a very important function in hospital economy. No stocks are kept outside the store-room except in the Central Nurses' Supply Room and the Operating Room. Otherwise all supplies are furnished from daily requisitions. For instance, in the Kitchen department, daily food supplies are furnished on written orders which cover only enough for the day's consumption. With our large storage space, the Purchasing Department has been able to stock up with large amounts of material at advantageous prices. The present value of stock on hand is about \$33,822. By a system introduced through the kind assistance of Mr. Allan Pollak, the store-keeper is able to present to the Physician-Superintendent a daily report of the cost of food supplies. An illustration, the cost of food on October 1, 1919, was \$316.41. The number of meals served was 1568; average cost per meal, 20.2 cents; estimated census for the day, 613.

CENTRAL NURSES' SUPPLY ROOM

Miss Clara DeForest is in charge with Miss Gladys Bagley as assistant. This department, which is concerned with the making, repairing, distribution and supervision of all nurses' supplies, has proved itself a greater source of efficiency and economy than expected. It is organized as an independent department under direct control of the Physician-Superintendent. The head is a graduate nurse, well trained in operative and administrative work. She has a graduate assistant and a woman helper. The Superintendent of Nurses assigns to this department 3 or 4 pupil nurses for limited periods who receive a thorough training in the making of supplies, the methods of saving used gauze and other materials, and the care and use of apparatus. When a nurse has passed through this department she has a better knowledge than she could otherwise obtain of the mechanics of Murphy drips, salvarsan sets, aspirating sets, Carrel apparatus, splints, orthopedic appliances, fracture beds, etc.

In line with this work it has been found practicable to place in charge of this department the supply and supervision of stock drugs, instruments, and various utility supplies of the wards. Each ward is standardized, provided with a posted list of its equipment, and it is the duty of the head supply-room nurse to check up the collected equipment periodically and see that it is complete and properly cared for. Listed equipment is renewed only through exchanges of condemned or broken articles.

The care of keys is another duty that fell naturally into this department. Every key belonging to the institution is marked with a brass tag and bears a number which, with its description, is registered. This is cross indexed with a card system which shows what keys are issued to each nurse or employee. All new keys are obtained from this department alone and all discharged employees return their keys before receiving their time.

LINEN DISTRIBUTION

One of the most difficult problems in institutional administration concerns the supply of linen. Hospital linen suffers from extravagance, destruction, chronic insufficiency and dishonesty. Following suggestions, developed from our Supply Room experiences in the standardizing and supervision of supplies, we are now making an intensive study of linen distribution. The formula which we have introduced depends on a study of each ward with reference to the amount necessary for a week's supply. A standard, based on the following items, is fixed and posted in each linen closet:

(1) The amount necessary for each bed for one day; (2) the amount of linen needed for daily change; (3) the amount needed in the linen closets as reserve for outgoing patients and emergencies; (4) amount in the laundry; (5) amount in the distributing room.

The total of these items, divided by the number of beds in the ward, gives the equipment for one bed. The resulting formula is as follows:

p = number of patients in the ward;

x = number of each article allowed per patient;

y = number of each article allowed for the reserve shelf;

z = number of each article on hand.

$px + y - z$ = number of each article that the nurse is allowed to order for daily use.

The formula eliminates the personal equation. In making out the order the nurse must show the number of patients and the number of articles on hand. The linen distributor can see at a glance by referring to the standard whether the order is correct. There is no guess work, no stacking-up and no shortage when the system is followed.

SCHOOL FOR NURSES

Probably the most important event in the historical progress of The Stanford School for Nurses occurred during the past year when the University established a pre-nursing course. College women may now receive the degree of A. B. and Graduate Nurse by pursuing three years of prescribed college work and spending two years in the training school. For the coming year eight women students have enrolled in this course.

The housing conditions for the nurses have improved very much during the past year. Eleven large residences in the immediate neighborhood of the hospitals are owned by the University. Nine have been assigned to nurses and two to employees. While these houses afford comfortable living quarters, still they present many difficulties in the way of economical administration, social life and discipline.

LAUNDRY

With a total of 79,935 patient days, a resident staff of sixteen, and an average of 147 pupil nurses, and 160 employees, the laundry turned out an average of 199,324 pieces per month or 2,391,892, for the year.

BUSINESS OFFICE

The office force has been somewhat enlarged during the past year and for convenience of administration has been organized as follows:

MR. W. L. COTTLE	Chief Accountant
MISS ANNIE ENGEL	Cashier
MISS D. KORBUS	} Assistant Bookkeepers
MISS E. LUTLEY	
MRS. A. LHULLIER	
MRS. M. J. DESIRÉ	Secretary to Physician-Superintendent
MISS A. CULIN	Information Nurse
MISS G. L. BRAMBILA	Registration Nurse
MISS C. KENT	Receiving Nurse

The appointment of a graduate nurse to fill the position of Receiving Nurse has proved a practicable and successful idea. Her special duties are to see that rooms are ready for expected patients, to meet them on arrival, to conduct them to their rooms, to look after their physical comfort outside the nursing end, to receive complaints and see that they are adjusted; finally to supervise the arrangements for the departure of patients. The Receiving Nurse has also proved a welcome aid to attending physicians in carrying out their suggestions for the comfort of patients.

During the year ending August 31, 1919, the business office made a very remarkable record on collections. Hospital accounts are notoriously poor on the credit side and often as much as 5% is reserved for bad debts. Our chief accountant, Mr. W. L. Cottle, reports that the uncollectible accounts for the past year amounted to but 7/10 of one per cent.

GEORGE BURBANK SOMERS,
Physician Superintendent.

DIVISION OF MEDICINE

The teaching and clinical staff of the division for 1918-19 consisted of: Albion Walter Hewlett (executive), professor; William Fitch Cheney, Harold Phillips Hill, Andrew William Hoisholt, clinical professors; Thomas Addis, Walter Whitney Boardman (acting executive), Ernest Charles Dickson, Harold Kniest Faber, associate professors; Harry Everett Alderson, Charles M. Cooper, Walter Frank Schaller, associate clinical professors; Henry Herbert Yerington, assistant professor; Harry Reeves Oliver, Julian Mast Wolfsohn, assistant clinical professors; George De Forest Barnett, instructor; William Redwood Price Clark, Thomas George Inman, Arthur Aloysius O'Neill, Alfred Cummings Reed, Chester Durbin Sewall, Roland Beatty Tupper, Edward V. Knapp, Peter Harrison Luttrell, Philip Hale Pierson, Millicent Cosgrave, Maude Noble Haven, clinical instructors; William Louis Adams, Charles Nelson Leach, Henry George Mehrtens, Jay Marion Read, Clement H. Arnold, Norbert J. Gottbrath, William Kenney, Mary Layman, Charles Ernest von Geldern, assistants; M. J. Désiré, lecturer on physical therapeutics; Arthur John Ritter, lecturer on mental deficiency; Robert Eugene Bering, lecturer on drug addictions.

The following members who were absent on active service have returned during the year: Albion Walter Hewlett, Thomas Addis, Ernest Charles Dickson, Harold Kniest Faber, William Redwood Price Clark, Thomas George Inman, Julian Mast Wolfsohn, George De Forest Barnett, Alfred Cummings Reed, Roland Beatty Tupper, and Jay Marion Read. Harry Reeves Oliver and Charles Nelson Leach are still absent.

Instruction was seriously hampered during the autumn quarter by the epidemic of influenza. This came at a time when many of the staff were absent on active service. Those remaining had great demands made upon their time by patients, and many were themselves ill of the disease. For these reasons various courses were interrupted and students were used to combat the epidemic. Acknowledgment should be made of the sacrifices made by many of the staff in order to continue medical teaching during this trying period.

Instruction was given in the medical wards of the Lane and San Francisco Hospitals, in the Children's Ward of Lane Hospital, in the tuberculosis wards at the San Francisco Hospital, in the Isolation Hospital, in the various out-patient clinics, and in the X-ray department of Lane Hospital.

Instruction in the medical wards of Lane Hospital was given by Doctors Hewlett, Cheney, Cooper, and Boardman in Medicine, by Doctors Schaller, Inman, and Mehrtens in Neurology, by Dr. Hoisholt in Psychiatry, and by Dr. Alderson in Skin Diseases and Syphilis.

The Medical Service at the San Francisco Hospital was in charge of Dr. H. P. Hill, assisted by Doctors Kenney, Luttrell, and Tupper. The Tuberculosis Service at the San Francisco Hospital was in charge of Dr. W. R. P. Clark and Dr. P. H. Pierson.

The number of admissions during the year to the Medical Clinic Ward at Lane Hospital was 1502. The number of medical admissions to the clinic beds in the Children's Ward was approximately 180. The average number of beds occupied in the former was 26 per day and in the latter 7 per day. The following table gives the number of patients who have been treated in the Out-patient Clinics attached to the Medical Division:

Out-patient Clinic	New Patients	Old Patients	Refers and Transfers	Total Visits
Medical	1,759	8,616	701	11,076
Children's	1,688	4,706	418	6,812
Skin	840	4,834	738	6,412
Neurological	414	2,989	277	3,680
Mental	93	122	7	222
Chest	107	1,245	174	1,526
Dental	617	190	65	872

Investigation has been hampered by conditions incident to the war and the influenza. During his army service, Dr. Addis made several careful studies of the "irritable heart," a condition which has proved to be an important cause of military unfitness. Dr. Wolfsohn, while on active service, published several papers dealing with the war neuroses. Dr. Kay and Mr. Tufts reported the method of rapid digitalis administration, used

in the wards of the Medical Clinic. In the Clinical Laboratory, Mr. Shevsky has been studying the blood sugar and Dr. Nagayama studied the effect of acid and alkali administration upon the excretion of urea. Dr. Schaller has continued his work on central nervous lesions, especially those of the spinal cord. Dr. Mehrtens has developed a new technic for the treatment of cerebro-spinal syphilis. To aid this work a grant has been received from the U. S. Interdepartmental Social Hygiene Board. Dr. Alderson has likewise received a grant from this board for the investigation of better methods of treating syphilis. His clinic is actively co-operating with the State Bureau of Social Hygiene in the effort to control this disease. Dr. Hoisholt has completed his translation of Wimmer's Psychiatric-Neurologic Examination Methods. Dr. A. C. Reed is editor of the California State Journal of Medicine.

The Division is indebted to Mr. C. N. Felton and Mrs. Kate Felton Elkins for their generosity in maintaining a fund for the hospital care of clinic patients. So far as practicable, this fund is used for the intensive study of unusual conditions. The Division is likewise indebted to Mr. and Mrs. William Fitzhugh for their gift of radium, to which reference is made elsewhere.

The following courses were given:

Instructors	Courses	Units	Attendance				
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter	
Hewlett, Arnold.....	1. Physical diagnosis	7½	2	.....	12	.....
Knapp.....	2. Clinical pathology	4	2	.....	12	.....
Hewlett, Barnett, Dickson.....	3. Diseases of thoracic organs....	4	.....	11	.....	.....
Cheney, Board- man, Sewall.....	4. Diseases of digestive tract.....	4	9	.....	.....	7	
O'Neill, Reed.....	5. Infectious diseases	3½	.....	.....	25	.....
Havens.....	6. Diseases of kidneys, blood and metabolism	3	13	.....	.....	.....
Hewlett, Havens, Reed.....	7. History taking	3	4	2	4	3	
Reed.....	8. Tropical diseases	2	.....	.....	10	.....
Arnold.....	9. Diseases of endocrine glands	1	.....	.....	14	4	
Boardman.....	10. Experimental medicine	3	7	.....	.....	.....
Désiré.....	11. Physical therapeutics	2	.....	.....	12	4	
Hewlett.....	12. Dietetics	3	.....	.....	14	.....
Hewlett.....	13. Practical therapeutics and prescription writing	3	.....	16	.....	.....
Boardman, Donovan.....	14. Roentgenography	2	.....	14	.....	.....
Hewlett, Boardman.....	17. Set clinic in medicine	1	.....	33	22	10	
Yerington, Cosgrave.....	18. Pediatrics: Recitation	2	13	11	.....	2	
Yerington.....	19. Infant feeding	2	9	2	2	.....
O'Neill.....	20. Contagious diseases	2	6	7	.....	4	
Yerington, O'Neill, Ritter, et al.	21. Lectures on pediatrics	1	12	15	10	.....

Instructors	Courses	Units	Attendance				
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter	
Hewlett, Yerington, Mehrstens.....	22. Set clinic medical specialties	1	4	6	18	10	
Schaller, Mehrstens.....	23. Neurology	2		15	15		
Hewlett, Cheney, Boardman.....	24. Ward work, Lane Hospital....	7	8	7	3	5	
Hill.....	25. Ward work, S. F. Hospital....	7	7	6	3		
Hewlett, Reed, Sewall.....	26. Out-patient work in internal medicine	4-6		5	2	1	
Pierson.....	27. Out-patient work in tuber- culosis	2	4	3	3		
Clark.....	28. Tuberculosis clinic: S. F. Hospital.....	1		6	2		
Schaller, Inman.....	29. Neurology clinic: S. F. Hospital.....	2	5	6	3		
Schaller, Mehrstens.....	30. Out-patient work in neurology	6				1	
Alderson.....	31. Cutaneous medicine	2	12	18	1		
Alderson, Yerington.....	32. Out-patient and ward work in pediatrics and cutaneous medicine	6	8	10	5	2	
Boardman, Donovan.....	33. Roentgenography	2	4	21	8	2	
Hoisholt.....	34. Psychiatry	1½	22	21	19		
Ophüls, Stillman, Hewlett, Spal- ding.....	35. History of medicine	1		22			
Dickson and others.....	36. Jurisprudence	1	25				
Members of Army Medical Corps.....	37. Military medicine	1		22			
Schaller, Rumwell, Alderson, et al.	38. Industrial accident insurance	1			16		
Totals			176	279	235	55	

ALBION WALTER HEWLETT,
Professor of Medicine.

OBSTETRICS AND GYNECOLOGY

The teaching for the year 1918-19 has been done by Alfred Baker Spalding, professor; Henry Augustus Stephenson, Henry Walter Gibbons, assistant clinical professors; Ludwig Augustus Emge, instructor; Chester Biven Moore, John A. Sperry, clinical instructors; and Karl L. Schaupp, assistant. Francis B. Galbraith has assisted in the care of patients in the Women's Clinic. In addition to the above, Miss E. Wing is technician in the laboratory; Miss M. Greninger is clerk; Miss B. Smith, clinical nurse; and Miss J. Miller, social service worker.

In the Women's Clinic 6,481 patients have been treated. One hundred twenty-two have been confined in their homes by students. In the gynecological ward in Lane Hospital 308 patients have been cared for by Dr. Spalding and Dr. Emge. The gynecological patients at the San Francisco Hospital have been cared for by Dr. Gibbons and the obstetrical patients by Dr. Sperry. In the laboratory for Obstetrics and Gynecology 815

specimens have been studied. During the year Dr. Spalding completed a study on carcinomatous degeneration of teratomata, and a study of frozen sections of the female pelvis. Dr. Emge completed a study of mitochondria granules in the kidney. These papers will soon be published. Clinical papers were published by Drs. Stephenson, Emge, and Moore.

Assistant Professor Stephenson returned from war service with the rank of First Lieutenant on January 15, 1919. Assistant Clinical Professor Beasley was killed October 14, 1918, at Serge, France, while carrying in wounded. At the time of his death he held the rank of Major. Assistant Clinical Professor Frank Robert Girard has returned from France with the rank of major and is still in the service. Clinical instructor Joseph Richard Brown is still in France with the rank of Captain. Dr. Karl L. Schaupp returned from the service with the rank of First Lieutenant.

The San Francisco Maternity, having assisted the Womens' Clinic for the past seven years in the care of obstetrical patients in their homes, has joined forces with the Auxiliary to the Stanford Clinics and will continue to give aid in social service work and out-patient obstetrics. Through the gift by Mr. and Mrs. William Fitzhugh of 100 milligrams of radium to the University many patients in the Women's Clinic suffering from malignant tumors as well as a number with non-malignant tumors and other allied conditions are receiving the benefit of this form of treatment.

The following table shows the courses given in the division during the year and the attendance of students:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Spalding, Stephenson.....	1. Laboratory	3	9	-----	-----	6
Spalding, Emge.....	2. Obstetrics lectures	3	9	-----	-----	6
Spalding.....	3. Obstetrics lectures	3	-----	15	-----	-----
Spalding.....	4. Obstetrics lectures	2	-----	-----	15	-----
Stephenson, Emge.....	5. Ward rounds—Obstetrics	1	5	-----	10	3
Moore, Schaupp.....	6. Manikin exercises	1	3	5	-----	4
Stephenson, Emge.....	7. Women's clinic	2	5	6	10	-----
Emge, Sperry.....	8. Cystoscopy	1	-----	4	3	-----
Emge, Moore, Schaupp.....	9. Out-patient obstetrics	2 wks. 56 hrs.	7	5	5	4
Emge, Stephenson.....	10. Ward rounds—Gynecology.....	1	10	19	-----	-----
Spalding, Emge.....	11. Operating room—Stanford Hospital	-----	16	16	2	5
Gibbons.....	12. Operating room—S. F. H.....	1	8	-----	3	-----
Spalding, Emge.....	13. Gynecological lectures	1	22	-----	-----	4
Spalding.....	13. Gynecological lectures	2	-----	22	-----	-----
Stephenson, Emge.....	15. Special workers	-----	1	2	-----	3
Totals		-----	95	94	48	35

ALFRED BAKER SPALDING,
Professor of Obstetrics and Gynecology.

PATHOLOGY

The personnel of this division was made up of William Ophüls, professor; Elmer William Smith, instructor; Miss E. M. Douglas and Emile Ansermier, technical assistants.

Dr. Ophüls continued his work on arterio-sclerosis.

Dr. Smith completed his study of repeated intravenous injections of various types of streptococci in rabbits.

Dr. S. L. Haas continued his work on the epiphyseal cartilage plate of bones, and completed several new papers.

Mr. Ralph D. Lillie, a medical student, continued his work on leukaemia.

During the absence on military service of Dr. E. C. Dickson, the director of the Bacteriological Laboratory of the Medical Division, and of Dr. H. R. Oliver, the director of the Serological Laboratory, Dr. Elmer W. Smith volunteered to supervise the work in these two laboratories. On this account much of his time during the year was spent in these two laboratories.

The following report shows the courses in the division and the attendance of students:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Ophüls.....	1. General pathology (b).....	6	2	.....	13	.....
Smith.....	2. General pathology	1	.....	.....	10	.....
Ophüls.....	3. Special pathology	4	13	15	11	6
Ophüls.....	4. General pathology (a).....	8	3	.....	.....	.....
Totals			18	15	34	6

The number of autopsies this year was 189.

The number of pathological and bacteriological specimens examined in the laboratory amounted to 734.

WILLIAM OPHÜLS,
Professor of Pathology.

PHARMACOLOGY

During the present year the teaching was done by Dr. Crawford.

The research work on the pressor compound of the pituitary gland and on the chemistry of diphtheria anti-toxin was continued. A full discussion of the work done on the chemistry of diphtheria antitoxin was published.

The following table shows the courses offered :

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Crawford.....	1a. Pharmacology and materia medica....	9	2	.....	12	.....
Crawford.....	1b. Pharmacology and materia medica....	5	.....	15	.....	.....
Totals .....		.....	2	15	12	.....

ALBERT CORNELIUS CRAWFORD,
Professor of Pharmacology.

SURGERY

The teaching and clinical staff of the division for the year 1918-19 was as follows: Stanley Stillman, Emmet Rixford, professors; Rufus Lee Rigdon, Albert Brown McKee, Edward Cecil Sewall, clinical professors; Leonard Wheeler Ely, Frank Ellsworth Blaisdell, and John Francis Cowan, associate professors; Leo Eloesser, associate clinical professor; Hans Barkan, Philip Kingsnorth Gilman, Harrington Bidwell Graham. Harry Leslie Langnecker, Howard Young McNaught, Melville E. Rumwell, assistant clinical professors; Lewis Michelson, instructor; Johann Adolph Bacher, H. Alexander Brown, James Root Dillon, Ross Wallace Harbaugh, Lester O. Kimberlin, Roderic O'Connor, Caroline B. Palmer, Otis Allen Sharpe, Chester Howard Woolsey, clinical instructors; John Robert Burrows, Hubert W. Dudley, Josiah H. Kirk, Harold Staats Moore. Francis Raynes, Joseph D. Reeng, assistants; George W. Hartman (Genito-Urinary Surgery), Henry A. L. Ryfkogel, Burt S. Stevens (Surgery), Cullen F. Welty (Otology, Rhinology, and Laryngology), lecturers; and Nicholas Jacobs (Surgery), assistant lecturer.

During the year all members of the surgical staff who had served in the United States Medical Reserve Corps during the war have returned and assumed their duties in the college and hospital, except Dr. Leo Eloesser, who still continues his work in orthopedics at the Letterman General Hospital. Dr. Lewis Michelson has continued his duties as director of the Bureau of Social Hygiene with the California State Board of Health. Dr. George Rothganger has resigned as assistant clinical professor.

Instruction in general surgery at Lane Hospital has been given by Drs. Stillman, Gilman, Blaisdell, Cowan, and Kimberlin; and in the Out-patient Clinic by Dr. Rumwell. Instruction in general surgery at the San Francisco Hospital has been given by Drs. Rixford and Harbaugh.

The Public Surgical Clinic given by members of the surgical staff, including gynecology and genito-urinary divisions, has been conducted each Thursday morning from 9:00 to 12:00. The work of these clinics consists of demonstrations and discussions of surgical cases and operations.

The Out-Patient Surgical Clinic was under the supervision of Dr. M. E. Rumwell, assisted by Drs. Francis E. Raynes, Lester O. Kimberlin, H. O. von der Lieth, and Miss Linda F. Bugeia, clerk of clinic. The total number of visits to the Out-Patient Surgical Clinic was 7276, of which 1319 were made by new patients (including refers and transfers) and 5957 by old patients. One hundred and eighty patients were transferred to Lane Hospital and 60 were sent to the surgical service of the San Francisco Hospital.

During the year, 429 operations have been performed by the members of the Division of General Surgery in the operating rooms of the Stanford University Hospital.

In the Genito-Urinary Subdivision, the teaching and clinical work have been under the supervision of Dr. R. L. Rigdon, Chief of Clinic, and Dr. J. R. Dillon, assisted by Drs. J. D. Reeng and F. L. Wright; Mr. B. F. Jones, technical assistant, and Miss Julia F. Leib, clerical assistant. Dr. C. H. Woolsey, who served a year in the United States public health service at Camp Lewis, has recently returned and has taken up his work in the clinic.

The total number of visits to the clinic during the year was 8947. Of these, 7964 were by old patients, 479 by new patients, and 312 by referred patients.

There have been 120 cystoscopic and 25 endoscopic examinations made, and nine fulgurations have been performed in the clinic; 144 patients have been sent to Lane Hospital and 48 to the San Francisco Hospital. The total number of operations performed by members of the subdivision in the clinic and operating rooms of the Hospital was 164.

At the San Francisco Hospital, the Genito-Urinary Service has been in charge of Drs. J. R. Dillon and G. W. Hartman. A ward has been divided between the Stanford and University of California Medical Schools for the male urological work, and a well-equipped cystoscopic room has been fitted up in connection with it. During the year 44 operations were performed and 38 cystoscopic examinations were made. During the influenza epidemic the entire hospital was used for influenza patients, and no genito-urinary work was done for a period of two and a half months.

In Ophthalmology, the clinic was under the supervision of Dr. A. B. McKee, assisted by Drs. H. Barkan, O. A. Sharpe, H. A. Brown, and H. W. Dudley, with Mr. J. H. Brunnings, optician. Instruction in the clinic has been given by Drs. McKee and Barkan. The total number of visits of old patients was 4271; the number of visits of new patients was 1045; of referred patients, 527.

The number of patients sent to the Clinic Ward of Lane Hospital for treatment was 62. Fifty-one operations were performed by the staff in the operating rooms of the Stanford University Hospital.

Dr. Roderic O'Connor has had charge of the work in Ophthalmology at the San Francisco Hospital.

In Otolaryngology, Rhinology, and Laryngology, the clinic and instruction were conducted by Drs. E. C. Sewall, Chief of Clinic; H. Y. McNaught, Johann A. Bacher, Josiah H. Kirk, Howard S. Moore, and H. B. Graham (S. F. H.).

The total number of visits to the clinic during the year was 7478, of which 4817 were made by old patients, 1255 by new patients, 1406 by referred and transferred patients; 624 operations were performed in the clinic, and 478 operations were performed in the hospital.

The clinic is indebted to Miss Matilda Smith for the gift of the latest model of the Jones-Barany nystagmus chair; and to the Hanovia Company for the use of one of their ultra-violet ray machines which is being used for experimental purposes.

The clinic and instruction in Orthopedic Surgery were under the supervision of Dr. Leonard W. Ely, assisted by Dr. H. L. Langnecker. Miss H. Wallach has been clerical assistant.

The total number of visits to the clinic was 2212, of which 1553 were made by old patients, 384 by new patients, and 275 by referred and transferred patients. Dr. Langnecker returned from service in the United States Naval Reserve Force in April and has continued his work in the clinic. A special clinic for the restoration of function in stiffened joints has been established by Dr. Langnecker. Already a considerable number of cases has been referred to this clinic, many of these being industrial accident cases. At present the work is being done in the Orthopedic Clinic, but it will be transferred to the Hospital as soon as the Zander room is completed.

The laboratory of Surgical Pathology has been conducted by Dr. F. E. Blaisdell. During the year 276 specimens of tissue from the operating rooms of the Hospital and College Clinics have been examined, and many gross specimens have been added to the collection which now consists of 350 specimens. Owing to the many distractions, more or less directly connected with the war, research work in the laboratory has been less than usual.

The accompanying table shows the courses given for the year:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Cowan, Gilman.....	1. Principles	4½	2	.....	12	12
Blaisdell.....	2. Fractures and dislocations...	2	2	.....	12	12
Blaisdell.....	3. Surgical anatomy	1½	2	.....	12	12
Cowan, Gilman.....	4. Diseases of the extremities...	2	2	.....	11	11
Stillman.....	5. Diseases of the abdomen.....	2	14	.....	2	2
Rixford.....	6. Diseases of head and neck.....	2	.....	13	.....	.....
Gilman.....	7. Diseases of the thorax.....	1	.....	.....	15	15
Stillman, Cowan, Gilman.....	8. Set clinic	6	13	6	8	8
Rumwell.....	9. Out-patient	4	12	10	3	3
Cowan, Gilman.....	10. Ward work	2	13	2	13	13
Cowan.....	11. Tumors	3	8	.....	.....	.....
Blaisdell, Cowan.....	12. Laboratory	6	6	15	11	11
McKee.....	13. Ophthalmology	1	14	.....	.....	.....
Cowan, Kimberlin.....	14. Surgical clinic	10	16	17	12	12
Rixford.....	15. Clinic, San Francisco Hos....	11	.....	7	.....	.....
Rumwell.....	16. Out-patient clinics	1	8	7	11	11
Cowan, Gilman.....	17. Wards	1	5	10	11	11
Rumwell.....	18. Cadaver	1	.....	.....	10	10
Ely.....	19. Orthopedics	3	12	7	2	2
Rigdon, Dillon.....	20. Genito-urinary	5	18	14	14	14
Woolsey, Dillon.....	20b. Genito-urinary (didactic).....	1	18	20	15	15
McKee, Barkan.....	21. Ophthalmology	5	22	22	8	8
E. C. Sewall.....	22. Otology, etc.	4	22	22	16	16
Totals			209	172	198	198

JOHN FRANCIS COWAN,
Associate Professor of Surgery.

MILITARY SCIENCE AND TACTICS

During the academic year 1918-19 the teaching staff of the Department of Military Training has been as follows:

Professor, Samuel M. Parker, Major U. S. Army, retired; Assistant Professors, Morse Erskine, First Lieutenant of Infantry; and Second Lieutenants of Infantry, A. H. Badenoch, H. S. Bergstrom, Chas. A. Helm, Walter A. Keith, Donald Lambert. S. V. Larkey, L. O. Livernash, Elliott McAllister, Jr., George G. Mitchell, Alan R. Parrish, H. J. Ransohoff, W. G. Rhodes, Sinclair Smith, S. L. Spiegelman, W. A. White, W. B. Whittlesey, all from October 1, 1918, to December 20, 1918.

Milton L. Koll, Second Lieutenant Q. M. C., from November 15, 1918, to May 20, 1919.

Harry K. Kingsbury, First Lieutenant, Infantry, from January 8, 1919, to October 21, 1919.

Colonel Leroy P. Collins Field Artillery, U. S. Army, from April 1, 1919.

Major Howard Eager, Field Artillery, U. S. Army, from April 8, 1919.

Captain Edward A. Flanders, Field Artillery, from April 15, 1919, to October 21, 1919.

Lieutenant Paul F. DeHart, Field Artillery, from April 3, 1919, to August 1, 1919.

Lieutenant Overton Walsh, Field Artillery, from May 22, 1919, to October 14, 1919.

The work of the year was divided as follows:

Students' Army Training Corps, from October 1, 1918, to December 21, 1918; Reserve Officers' Training Corps, from January 1, 1919, to June 17, 1919.

The Stanford Unit of the Students' Army Training Corps was established for the express purpose of enabling the Universities of the country to give further aid in the prosecution of the war.

Physical examinations for the S. A. T. C. were begun on September 25, 1918, and inductions were begun on September 30th and largely completed in the first week of October. All members of the S. A. T. C. were quartered in Encina and Sequoia Halls during the entire period. From noon on September 30, the men were fed in a field mess, run by one officer and twenty cooks and bakers from Camp Fremont. Construction of the University Mess Hall was begun in late September. The building was completed and ready for use on November 5th, after which date the men of the Unit were very comfortably fed.

Influenza made its appearance among the students about the 10th of October, and soon became a general epidemic. The first seriously ill were sent to the Isolation and Peninsula Hospitals; later to the Base Hospital, Camp Fremont. Men only slightly sick were accommodated in Fraternity Houses which were converted into temporary infirmaries. The maximum number of sick was reached on October 19th, and thereafter decreased very rapidly. The number of deaths was as follows:

Army Unit, 5; Naval Unit, 1; total, 6.

The organization of the S. A. T. C. was as follows:

Non-technical group, eleven hours per week.

Company A, composed of men 20 years of age; Company B. composed of men 19 years of age; Company C, composed of men 18 years of age; Naval Unit, composed of men 18, 19, and 20 years of age.

Technical group, six hours per week.

Company D, composed of men 18, 19, and 20 years of age.

Before October first the policy was announced of keeping S. A. T. C. men in college as follows:

Men 20 years of age, three months; men 19 years of age, six months; men 18 years of age, nine months.

However, orders were soon received for transferring the best qualified men to Officers' Training Schools and they were sent in the following numbers:

October 10, Coast Artillery Officers' Training School, Fort Monroe, Va., 10 men; October 11, Machine-Gun Officers' Training School, Camp Hancock, Ga., 6 men; October 23, Infantry Officers' Training School, Camp MacArthur, Texas, 47 men.

Few of these men finished the course of training; all who did so were commissioned in the Officers' Reserve Corps when discharged. A group of about forty-five men was ready to go to the Field Artillery Officers' Training School at Camp Taylor, Kentucky, when their orders were countermanded.

On November 27th telegraphic instructions were received from the War Department directing the complete demobilization of the S. A. T. C. by December 21, 1918.

Members of the Units were discharged as follows:

December 11, Company A, 122 men; December 12, Company B, 142 men; December 12, Company C, 142 men; December 13, Company D, 147 men; December 17, Lane Medical Detachment, 24 men; December 17, Naval Unit, 116 men.

After demobilization of the S. A. T. C. the Reserve Officers' Training Corps was automatically re-established on January 1, 1919. Enrolment during the year has been as follows:

First Quarter—S. A. T. C.—Company A, 122; Company B, 142; Company C, 142; Company D, 147; Lane Medical Detachment, 24; Naval Unit, 116.

Second Quarter—R. O. T. C.—Company A, 94.

Third Quarter—Company A, 72.

A camp for the R. O. T. C. was held at the Presidio of San Francisco, from June 17 to August 2, 1919, with the following attendance: Robert B. Ardell and Lyman D. Wilbur.

There was no enrolment during the summer quarter.

SAMUEL MINTER PARKER,
Major U. S. Army, retired.

PHILOSOPHY

The faculty of the department for the academic year 1918-19 consisted of Henry Waldgrave Stuart, professor; and Harold Chapman Brown, associate professor.

The following courses were conducted, with registration and credit-value as shown:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Stuart.....	2. Elementary ethics	4	19	.....	.....	.....
Stuart.....	2. Elementary ethics	5, 2½	.....	.....	.....	19
Brown.....	3. History of philosophy.....	4	.....	41	80	.....
Brown.....	4. Nature and mind.....	4	.....	45	.....	.....
Brown.....	5. Esthetics	5	.....	.....	79	.....
Stuart.....	7b. Introd. to philosophy.....	4	.....	.....	16	.....
Stuart.....	8. Social order and individual	4	.....	.....	12	.....
Stuart.....	10. Contemporary philosophy ...	4, 2	.....	.....	.....	5
Brown.....	11. Seminary	3-5	.....	17	.....	.....
Stuart.....	11. Seminary	2-5	.....	.....	1	6
Stuart.....	12. War and democracy	3	54	.....	.....	.....
Totals			73	103	188	33

The total number of registrations in the department was 397. The number of major students was 11.

During the autumn quarter Professor Brown was out of university residence and was engaged in the service of the American Red Cross at Camp Fremont as Associate Field Director, with the military rank of captain. During the autumn quarter a section of the class in the course in "War Issues" (Military Training 2), was conducted by the undersigned.

HENRY WALDGRAVE STUART,
Professor of Philosophy.

PHYSICAL TRAINING AND PERSONAL HYGIENE

ENCINA GYMNASIUM

The teaching staff for the year 1918-19 was as follows: Harry R. Stolz, M.D., director of physical training; Ernesto R. Knollin, Harry W. Maloney, Melbourne C. Evans, Ernst M. Brandsten, instructors; P. H. Jones, J. Murphy, R. Lewelling, T. R. Haig, Mark Evans, A. A. Curtice, D. C. Wise, R. M. Hudson, teaching assistants; E. A. Wilson, office assistant.

Dr. H. R. Stolz, E. R. Knollin, and H. W. Maloney were absent in the service of the government.

E. M. Brandsten took the place of Dr. H. R. Stolz as acting director.

T. R. Haig left the force at the end of the winter quarter and Wise and Hudson were taken on for the spring quarter.

During the fall quarter the Students' Army Training Corps was in charge of all physical training.

Beginning with the winter quarter, E. R. Knollin, just released from the service, resumed his work here. At the same time M. C. Evans became a member of the staff. With the above mentioned assistants the department was soon in full headway. E. M. Brandsten was the only one of the staff who remained for the summer quarter.

The number of students enrolled during the winter quarter was 508, for the spring quarter 520, and for the summer quarter 55.

Several teachers' courses, for credit, were incorporated in the work. They included American football, track, baseball, boxing, wrestling, swimming and gymnastics. They proved to be very popular. Swimming was the only course offered for the summer quarter.

A number of additions to the equipment were undertaken. A boxing ring was built, new wrestling quarters were established, and the swimming court extensively improved. An office for the swimming instructor was erected.

For the convenience of the students, a store was established in the gymnasium where athletic goods could be purchased. A. A. Moore was appointed in charge of the same.

Through the courtesy of the University the swimming pool was opened to the public for the summer quarter, from 10 a. m. to 4 p. m.

ERNST M. BRANDSTEN,
Instructor in Physical Training,
and Acting Director.

ROBLE GYMNASIUM

The teaching in Roble Gymnasium has been carried on by Mary Blanchard, acting director; Greta Johannsen Brandsten, instructor in swimming; Gladys Garrish, teacher of dancing; and the student assistants. In the winter quarter, Mr. Robert Miller was teacher of fencing. Dr. Edith E. Johnson was Acting Medical Adviser during the autumn, winter and summer quarters. Dr. Mosher, after her return from Red Cross service in France, was on duty during the spring quarter; Miss Blanchard was absent during this quarter.

During the spring, consultations were held with the Registrar concerning the problems which had arisen in relation to the enforcement of the two years' required work in Physical Training.

Attention was called to the very small number of upperclass students who were registered for work in Physical Training as compared to the 50 per cent of such students who had been registered before the rule of two years' required work was inaugurated. To meet this condition one hour of credit for three hours of work in Physical Training was restored to upperclass women who have completed the two years' required work.

Much time was devoted in the spring quarter to correlating the courses already available in Science which should form the basis for the special preparation of teachers of Physical Training and Personal Hygiene. Careful study was made of the problem to determine how far, under existing conditions, the department of Physical Training and Personal Hygiene for women could go in the matter of attempting to train teachers to meet the demand created by the state law requiring Physical Training in all the public schools, without lowering the standards of sound and thorough work. A detailed report was made to the President, and the available courses in science published in the *Register*.

The appointment of an Associate Director of Physical Training for women was recommended and approved.

Owing to the small registration in the summer quarter, the question has arisen whether it is worth while to offer any other courses in Physical Training than swimming, for which there is always a great demand at this season.

Dr. Mosher gave six lectures on Personal Hygiene in the Teachers' Course in Physical Training of the National Board of the Y. W. C. A. in New York City in August, and was also a delegate to the International Conference of Women Physicians held in New York City September 15 to October 25, where she presented a paper on "The Strength and Endurance of Women."

CLELIA DUEL MOSHER,
Assistant Professor of Personal Hygiene, and
Director of Roble Gymnasium.

PHYSICS

The faculty of the Physics department for the year 1918-19 has consisted of Professor Fernando Sanford, Associate Professor Frederick John Rogers; Assistant Professors Elmer Reginald Drew, Joseph Grant Brown and Perley Ason Ross; and Assistants George R. Harrison, and Irene M. Pauly.

The registration in the department was smaller than usual, there being but five major students. One Master's degree and one Bachelor's degree were given in the department.

The courses given and the registration in each course are shown in the table below:

Instructor	Courses	Lec. Hours	Lab. Hours	Attendance			
				First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Ross.....	1. Dynamics	2	9	15	.....	.....	.....
Rogers, Harrison.....	1. Dynamics	2	3	.....	.....	.....	6
Ross, Pauly.....	A. S. A. T. C.....	2	6	42	.....	.....	.....
Ross.....	2. Heat	2	9	.....	7	.....	.....
Drew.....	3. Electricity	3	6	.....	.....	13	.....
Rogers, Harrison.....	3. Electricity	3	6	.....	.....	.....	5
Brown.....	4. Sound and light .....	.....	15	4	.....	.....	.....
Sanford.....	5. General adv. physics.....	3-5	.....	1	3	3	.....
Sanford.....	5a. Meteorology	3	.....	6	.....	.....	.....
Brown, Pauly.....	6a, 6b. S. A. T. C.....	3	12	36	.....	.....	.....
Brown.....	6a. Mechanics and heat.....	3	6	.....	30	.....	.....
Ross, Harrison, Pauly.....	6b. Wave motion	3	9	.....	.....	50	.....
Rogers, Harrison.....	6c. Electricity	3	9	25	.....	.....	.....
Rogers.....	6d. Electrical meas.....	2	6	.....	20	.....	1
Drew.....	7a. Mechanics and heat.....	3	12	45	.....	.....	.....
Drew, Pauly.....	7b. Electricity and light.....	3	12	.....	34	.....	.....
Drew.....	7c. Special	3	.....	.....	.....	27	.....
Ross.....	10. Analyt. mechanics	3	.....	1	2	.....	.....
Drew.....	11. Thermodynamics	3	.....	.....	1	.....	.....
Drew.....	12. Kinetic theory	3	.....	.....	.....	1	.....
Rogers.....	14a-14b. Motion	3-2	.....	.....	.....	1	1
Sanford.....	16. Literature of physics.....	1	.....	.....	1	1	.....
Brown.....	17. Teachers' physics	3	.....	.....	1	.....	.....
Sanford.....	18. Investigation .....	.....	.....	2	2	2	.....
Totals				177	101	98	13

Since this report marks the termination of the incumbency of the present Executive Head of the Physics department, it may be permissible to refer briefly to the record of the department since the opening of the University.

In common with other departments of Physics throughout the world, this has been one of the smallest departments of the University when considered in terms of its registration of major students. This seems to be partly due to the fact that the financial rewards are mostly for men who study science for technical purposes rather than for the purpose of promoting science. The Physics department at Stanford has, against much opposition, been a scientific, rather than a technical department, and has declined all proposals to affiliate itself with any technical department. It has been the belief of the Physics faculty that a university department of Physics should train its major students to be physicists first, and engineers or inventors later, if at all. Since all material progress must follow scientific discovery, the training of men in the methods of scientific research is of the first importance, outranking the importance of imparting knowledge of the principles of science.

The result of this point of view on the part of the department faculty may be seen in the relatively large number of its graduates who

have devoted themselves wholly, or in part, to scientific investigation. The department has graduated, in all, forty-four students with the A. B. degree, has given the M. A. degree to eighteen and the Ph. D. degree to eight. In addition to this, four of its graduates have taken the doctor's degree elsewhere.

Of the twenty-nine men still living who have taken degrees from this department, five are devoting themselves wholly to scientific investigation, one of them being at the head of one of the largest private research laboratories in the world, four are university professors and two are university instructors in Physics, six are instructors or principals of normal schools or high schools, two are successful consulting engineers, and one is a widely known inventor.

This record seems to the writer to justify the methods of science instruction for which the department has always stood.

FERNANDO SANFORD,
Professor of Physics.

PHYSIOLOGY

The staff of the department was as follows: Ernest Gale Martin, professor; James Rollin Slonaker and Frank Walter Weymouth, assistant professors; George D. Shafer, instructor; Helen Lucile Williamson and Don R. Tresidder, assistants in instruction.

The courses of instruction offered during the year, with the attendance in each, are listed in the table below:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Slonaker, Shafer.....	A. Military hygiene.....	2	181	58	.....	.....
Weymouth, Shafer.....	1. El. physiology	5	9	.....	.....	.....
Weymouth, Shafer.....	2. El. physiology	5	.....	5	.....	.....
Slonaker, William- son, Tresidder.....	3. Physiol. of nerve and muscle....	5	.....	31	.....	.....
Martin, Slonaker, Shafer, Tresidder...	4. Physiol. of circulation and di- gestion	5	.....	.....	41	.....
Weymouth, Wil- liamson.....	5. Physiol. of sense organs.....	5	8	18	.....	.....
Martin, Weymouth, Williamson.....	S. General physiology ¹	5	.....	.....	.....	8 ²
Department faculty...	6. Journal club	1	2	5	5	.....
Martin, Slonaker.....	7. Adv. physiology	2-5	1	.....	1	.....
Totals.....			201	117	47	8

¹ Course 7, Hopkins Marine Station.

² Including one registered for the first term of summer quarter only.

Miss Williamson completed during the year her statistical study of muscular strength and muscular symmetry in children, submitting the results of the study in partial fulfillment of the requirements for the degree of Master of Arts.

Assistant Professor Weymouth spent the spring quarter in the field completing a survey of the edible mollusks of California for the State Fish and Game Commission and during the summer in connection with the work at the Hopkins Marine Station continued investigations on the life histories of certain of these forms. He has also continued work on the edible crab for the British Columbia Provincial Government.

Assistant Professor Slonaker is continuing his study of the life processes of the albino rat with special reference to the effect of restricted diet on the gestation and young; and of estruation on the voluntary activity. A paper on adaptation in the common mole is almost ready for publication.

Professor Martin was absent from the University during the autumn and winter quarters in the service of the Government. He was assigned to the Headquarters of the 10th Division as Division Nutrition Officer, continuing in this duty until the demobilization of the Division at the end of January, at which time he was discharged from military service. He held during this period the rank of Captain in the Sanitary Corps.

After his release from army duty Professor Martin was reappointed Scientific Assistant (physiologist) in the United States Public Health Service, and detailed to the Working Conditions Service in the Department of Labor. His time, until the end of the winter quarter, was occupied with the study of the conditions of female labor in industrial establishments. After his return to the University, at the beginning of the spring quarter, he was engaged in the statistical analysis of data obtained in connection with the above study. This analysis was virtually completed by the end of the summer quarter and will be submitted to the Surgeon-General of the Public Health Service shortly.

ERNEST GALE MARTIN,
Professor of Physiology.

PSYCHOLOGY

During the past academic year, the department was without the services of Dr. DeCamp for the autumn term, and of Dr. Coover for the rest of the year. The former was stationed at Camp Kearney, as psychological examiner, and the latter was connected with the Psychological Division of the Medical Research Bureau of the Surgeon-General's Office. It is one of the illustrations of the fortunes of war, that while both men are able experimenters and investigators, the one, DeCamp, returned as a private, and the other, Coover, as a captain.

The courses given, and the attendance are as follows:

Instructors	Courses	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Angell.....	1. General psychology	3	58	63	.....	.....
Angell.....	1x. War psychology	2	.....	.....	34	.....
DeCamp.....	3. Mental hygiene	3	.....	.....	.....	13
Trace.....	4a. Experimental psychology....	3	8	16	16	.....
DeCamp.....	5. Abnormal psychology	3	.....	40	.....	2
DeCamp.....	5a. Clinical psychology	3 or 4	.....	.....	7	1
Angell.....	7. Advanced laboratory	3	4	4	6	.....
DeCamp.....	8. Psychophysics	2 or 3	.....	6	5	8
Angell.....	11. Current literature	2	3	5	5	.....
Angell.....	14. Research	3	1	1	.....	.....
Trace.....	15a. War psychology	3	31	.....	.....	.....
Coover.....	15b. War psychology	2	37	.....	.....	.....
Totals			142	135	73	24

Most of the courses were hardly satisfactory. The war courses were, of course, given in response to general orders. How 15a and 15b turned out, I do not know, but Psychology 1x was neither war nor psychology.

FRANK ANGELL,
Professor of Psychology.

ROMANIC LANGUAGES

The department faculty for the year 1918-19 consisted of Oliver Martin Johnston, professor; Clifford Gilmore Allen, Aurelio Macedonio Espinosa, associate professors; Stanley Astredo Smith, assistant professor; Alfred Coester, acting assistant professor (summer quarter); Gabriel Henri Grojean, Louis Peter de Vries (spring quarter), Felipe Morales de Setién, Eugene Jean Oberlé, instructors; Ida Stauf, Eva F. de Kerpezdron, Laurence Deane Bailiff, Marion Albert Zeitlin, teaching assistants.

The number of major students was 124, of whom 16 were graduates; 15 received the degree of A. B. and one the degree of A. M.

The courses given were as follows, with attendance as indicated:

Instructors	Courses	Unit Hours	Attendance					
			First Quarter	Second Quarter	Third Quarter	4th Quarter		
						First Term	Second Term	
de Vries, Baillif, de Kerpezdron, Oberlé, Stauf.....	A1-A3. Elementary French	5	180	137	140	.....	.....
Johnston, Oberlé, Smith.....	A21-A23. Second-year French	5	97	89	77	10	9	
Oberlé, Smith.....	A24. French pronunciation	2	.....	32	11	7	6
Johnston, Smith.....	A30. Directed French reading.....	1-2	8	52	23	2	2	
Grojean, Smith.....	A51-53. Advanced French com- position and conversation	4	35	31	25	4	5	
Grojean.....	A54. Cours de style.....	4	.....	.....	6	3	4
Grojean.....	A55. History of French civilization	3	11	.....	.....	.....	.....
Smith.....	A57. Outline course in the his- tory of French literature	3	.....	.....	8	.....	.....
Smith.....	A58. French literature in the seventeenth century.....	4	.....	12	.....	6	4
Grojean.....	A60. The romantic movement in France	4	.....	.....	5	2	2
Johnston.....	A66. Problems of teaching French	3	.....	.....	8	.....	.....
Johnston.....	A67. Introduction to Old French	3	.....	.....	6	.....	.....
Johnston.....	A68. French historical grammar..	3	.....	.....	3	.....	.....
Johnston.....	A72. French seminary: Corneille	3	11	.....	.....	.....	.....
Allen, Baillif.....	B1-B3. Elementary Spanish	5	47	46	42	.....	.....
Allen, de Setién.....	B21-23. Second-year Spanish.....	5	56	53	59	.....	.....
Allen.....	B30. Directed Spanish reading.....	1 or 2	1	16	19	.....	.....
Coester, de Setién.....	B51-53. Advanced Spanish com- position and conversation	3	23	19	15	6	6	
de Setién.....	B55. History of Spanish civiliza- tion	3	.....	.....	9	.....	.....
Allen.....	B58. Spanish classics	4	25	.....	.....	.....	.....
Allen.....	B59. Spanish literature in the eighteenth century	3	.....	13	.....	.....	.....
Espinosa.....	B62. Dramáticos contemporáneos	1	.....	.....	.....	.....	3
de Setién.....	B63. Obras maestras	3	.....	13	.....	.....	.....
Allen.....	B65. Modern Spanish lyrics.....	3	12	.....	.....	.....	.....
Espinosa.....	B66. Problems of teaching Span- ish	2	.....	.....	.....	6	6
Coester.....	B69. Spanish-American literature	2	.....	.....	.....	.....	8
Allen.....	B73. Calderón	3-5	.....	.....	9	.....	.....
Grojean, Smith.....	C1-C3. Elementary Italian.....	5	4	6	6	.....	.....
Espinosa.....	F51. Romance versification	3	.....	.....	.....	6	7
Espinosa.....	B67. Introduction to the study of Old Spanish.....	3	.....	.....	.....	6	5
Totals			509	520	471	58	67	

Miss Stauf offered a course in beginning French for Y. M. C. A. Secretaries training at Stanford, during the month of September, for work abroad. A similar course was given by Mr. Oberlé for the Y. M.

C. A. secretaries training here during the months of October, November, and December.

Professor Johnston offered courses at the University of California during the Summer Session, June 30th to August 9th.

Associate Professor Espinosa spent the autumn quarter in New York City, serving as a member of the House Inquiry. During the spring quarter he was absent on sabbatical leave.

Dr. Alfred Coester, chairman of the Modern Language Department of Evander Childs High School, New York, was appointed acting assistant professor of Spanish for the summer quarter.

Mr. de Vries, who had been absent on leave serving in the National Army in France, returned to the University early in April.

Instructor de Setién tendered his resignation in order to accept the professorship of Spanish at the University of Southern California.

OLIVER MARTIN JOHNSTON.
Professor of Romanic Languages.

ZOOLOGY

The department faculty for the year 1918-19 consisted of Charles Henry Gilbert, George Clinton Price, Harold Heath, professors; John Otterbein Snyder, associate professor; Edwin Chapin Starks, Walter Kenrick Fisher, assistant professors.

The classes and the enrolment for each quarter are given in the following table:

Instructor	Courses	Unit Hours		Attendance			
		Lec.	Lab.	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Price, Starks.....	1. General	1	5	31			
Starks.....	1. General	1	5		25	24	6
Fisher.....	2. Ecology invertebrates...	1	5				4
Snyder.....	4. Vertebrates	1	5			11	
Heath.....	5. Invertebrates	1	5	5			
Heath.....	6. Invertebrate embryology	1	3			1	1
Heath.....	7. Advanced invertebrates		3				3
Heath.....	8. Economic zoology	1	5				9
Fisher.....	9. Research		7				1
Snyder.....	10. Advanced vertebrates...		1	1			
Snyder.....	11. Comparative anatomy of vertebrates	1	2-9	3	35		
Snyder.....	12. Mammalian anatomy.....		3-5		5		
Price.....	13. Vertebrate embryology..	1	3-5		14	26	
Price.....	14. Advanced embryology...		2-4			3	
Gilbert.....	16. Primitive chordates.....		5	1			
Gilbert.....	17. Fishes		5		3		
Starks.....	18. Advanced ichthyology...		5-10	1	1	2	1
Gilbert.....	19. Journal club	2		2	4		
Gilbert.....	Research		5-10	2	2		
Totals				46	89	67	25

Professor Gilbert has continued his investigations of the salmon fisheries of Alaska in coöperation with the United States Bureau of Fisheries, in the course of which he secured leave of absence from the University during the spring quarter of 1918-19, and spent the greater part of the following six months in the field, examining particularly the Copper River, Bristol Bay, the western end of the Aleutian Peninsula, and Kodiak Island. Recommendations have been made for such changes in our fishery regulations as have been shown to be urgently required to prevent the rapid destruction of the industry, and investigations are in progress of a series of scientific problems intimately connected with the economic phases of the salmon fisheries.

Professor Heath was engaged during the summer of 1918 in making investigations of the fur seal herd on the Pribilof Islands, Alaska, on behalf of the Federal Government. As a result of a serious accident incurred during the progress of the work, he was compelled to obtain leave from the university during the latter half of the fall quarter. Subsequently he has studied certain phases of the oyster and shrimp problems under the auspices of the California State Fish and Game Commission. The investigation embraces a survey of the grounds occupied by these animals, their abundance, breeding period, rate of growth, and their conservation, together with various experiments relating to their more intensive and extensive cultivation.

Associate Professor Snyder has undertaken an extensive investigation of the salmon and trout of California, under the authority of the California State Fish and Game Commission. In company with two students in the department, the entire summer was spent in field work extending from Monterey Bay to the northern part of the state. A large collection of specimens and much data relating to the life history of salmon and trout were secured for the purposes of this investigation.

Assistant Professor Starks prepared during the year a series of papers for publication by the California Fish and Game Commission on the edible fishes of the California coast. These papers, by the aid of simple keys and illustrations, were designed as a ready means of identifying our market fishes by the non-technical reader. The preparation of specimens for the exhibition cases was continued. The importance of these cases in the instructional work of the department increases from year to year.

Assistant Professor Fisher, now in charge of the Hopkins Marine Station, spent the year in organizing the work and equipment of the Station. He saw through the press a monograph on the "Starfishes of the Philippine Seas and Adjacent Waters" and continued work on part two of "Asteroidea of the North Pacific."

CHARLES HENRY GILBERT,
Professor of Zoology.

APPENDIX III.

COMMITTEE REPORTS

ATHLETICS

In the preceding report, the Faculty Athletic Committee discussed the grave evils existing in the present system of intercollegiate athletics, especially the evil of commercialism, and they recommended certain measures to meet the conditions—chief among them, a deep cut in athletic expense and a decrease or abolition of gate receipts.

To these recommendations, the Committee has nothing to add. The evils of concentrated sport have been pretty thoroughly ventilated throughout the United States, and conditions now perhaps call for action rather than for further discussion.

There is also little to report on the condition of athletics at this university during the past year. The university authorities for athletics decided under the war conditions existing at the University, to pass over to the military authorities, more especially to the S. A. T. C. officers, the control of all the sports, in order that they might fit closely into the schemes of military training. As an S. A. T. C. organization, the students played the old game of football with the Student Body of the University of California, and the Rugby game with the S. A. T. C. organization of Santa Clara.

In the Spring, the athletic authorities of the University resumed their functions, and track and field sports, base- and basketball, rowing, swimming, boxing, and wrestling, were carried on as in ante-bellum days. There is nothing to call for special comment on these sports beyond what was noticed in the preceding report, except the status of rowing. This sport, under the condition existing at the University, can hardly be carried on as a factor in "general participation." It is here necessarily a case of training and practice for an intercollegiate event. In addition, the expense of rowing has brought about a condition which conflicts with the policy of retrenchment and the diminution of gate receipts laid down in the preceding report. To meet the large expenses of rowing the plan of "big games" and big gate receipts is being persistently urged. The Committee feels that this is a situation which should be met before it becomes acute.

They sympathize with the sport as being perhaps the highest of the

high-class sports of the University; but as carried on under the grave physical difficulties that obtain here, together with the constantly growing tendency toward increase in expense, they feel that the conditions call for very careful treatment.

FRANK ANGELL,
Chairman.

BOARD OF ATHLETIC CONTROL

The members of the Board for the year 1918-19 were the following:

Faculty—F. Angell, A. T. Murray, J. P. Mitchell.

Alumni—L. W. Cutler; R. W. Barrett; T. M. Williams, absent on Government service.

Students—W. I. Ames (throughout the year), E. W. Masters, J. K. Lilly, H. Galloway, C. S. Teitsworth (for portions of the year).

Officers—R. W. Barrett, chairman; J. P. Mitchell, treasurer; W. I. Ames, secretary.

The year 1918-19 presented many difficulties for the Board of Athletic Control. In October 1918, the organization of the Students' Army Training Corps put an end to all the ordinary athletic relations. On October 9, 1918, the Board voted "that the arrangements for athletics be left in the hands of the military authorities for the present" and suspended most of its ordinary functions for an indefinite period. The routine work of the Gymnasium was continued on a very small scale with most of the building turned over to the military authorities. The swimming pool was kept in operation and the grounds were kept in repair.

The questions of intercollegiate relations with the University of California, and, especially, whether or not Stanford should play American football, were before the Board throughout the year. The actions of the Board on these questions are best recorded by the following extracts from the minutes of its meetings:

On April 4, 1918, the Board was on the point of arranging with the University of California for an agreement for three years on the basis of playing both the American and Rugby games. After a lengthy discussion concerning the general situation, in view of the war needs for men and money, it was finally voted "that no new intercollegiate agreement for athletic contests be entered into until the war situation justifies doing so." The result of this was that both of these questions were dropped from immediate consideration for an indefinite period. On October 9, 1918, it was voted to recommend to Captain Parker, the Commanding Officer of the local S. A. T. C. Unit, "that the Board would favor the playing of both an American and a Rugby game with the University of California, the games to be under the auspices of the Red Cross, and to suggest that the American game be not played unless the Rugby game is also arranged for."

Then followed the discontinuance of the Students' Army Training

Corps after the armistice in December and the usual spring sports were scheduled. The Board resumed consideration of the football question, and on February 11, 1919, voted "that the organization of an American football team be authorized for the fall of 1919, and that the Student Manager be instructed to apply to the Pacific Coast Conference for a schedule of such games as might be feasible in view of the policy regarding coaches, adopted by this Board." The policy regarding coaches referred to in the above motion is that the coaches should be appointed by the President, should rank as instructors in the University to serve on a full-time basis throughout the year, and instruct in more than one sport.

On June 14, 1919, the Board voted "that it was the sense of the Board that the students use their own discretion in the matter of scheduling a football game with the University of California."

The outcome of the above actions was that an American football game with the University of California was scheduled for November 22, 1919.

In the fall of 1918, the Board adopted a policy of severe retrenchment in view of the uncertainty of its income from fees and gate receipts. All unnecessary expenses were avoided and the ordinary costs of upkeep were reduced to a minimum. In the spring of 1919 the same policy was necessarily assumed with, however, relaxing vigor as the usual sources of income gradually reappeared. The uncertainties as to the income were not cleared up until the accounts with the University were closed during November, 1919, when it appeared that considerable sums had not been credited to the Board during the confusion of the year and that a substantial balance remained to its credit.

During the year an effort was made to put the care of the grounds on a nearly self-supporting basis, by developing the income from the raising of sheep and other farming operations carried on by the custodian of the grounds. An additional tract of seventy-six acres was leased from the University and the farming operations were expanded. There was, of course, no immediate increase in the income, but a foundation has been made for successful farming operations which will develop a very satisfactory return in the near future.

Throughout the year the student representation on the Board was unsatisfactory as a result of the general conditions existing in the University. Constant changes in the student membership and the absence of the usual type of student leaders resulted in an appreciable weakening of the student voice in the actions of the Board. This gave rise to a feeling in the Student Body that the Board was out of touch with student sentiment, a fault that the organization of the Board was especially designed to prevent. It is reasonable to believe that with the return to normal conditions and the election of strong student representatives on the Board, this feeling will disappear.

The following report presents a summary of the financial transactions for the year:

RECEIPTS

Gymnasium Fees	\$14,117.31	
Fees, Associated Students ¹	2,966.12	
Swimming Pool, summer admission charges	87.00	
Boys' Physical Training Class	48.00	
Rugby, Receipts in excess of expenditures (balance item)	35.15	
Track, Receipts in excess of expenditures	881.28	
		\$18,134.86
Profits of Store	183.35	
Old boat sold	5.00	
		188.35
		<u>\$18,323.21</u>

DISBURSEMENTS

Paid Associated Students old balance	\$30.18	
Bought Equipment for Football, etc.	1,074.83	
Accounting and office supplies	446.66	
Baseball, excess of disbursements over receipts	605.34	
Basketball, excess of disbursements over receipts	224.36	
Swimming team, excess of disbursements over receipts	61.05	
Soccer team, excess of disbursements over receipts	57.36	
Seattle Track Meet, excess of disbursements over receipts	420.29	
Boxing expenses	28.30	
Tennis expenses	99.23	
Trap-Shooting expenses	25.00	
Wrestling expenses	48.18	
Crew, contribution to expenses	250.00	
Sweaters	235.79	
Salaries for Gymnasium, paid by Board of Trustees of the University	4,608.40	
Salary, Student Manager	333.28	
Salary, Custodian of Grounds	746.80	
Upkeep of grounds	335.69	
Gymnasium expenses	2,366.91	
General expenses	28.99	
		\$12,026.64
Balance carried to surplus account		6,296.57
		<u>\$18,323.21</u>

BALANCE SHEET

ASSETS

Due by Bank of Palo Alto	\$659.08	
Due by Board of Trustees of University	2,549.94	
Due by Stanford Union ²	1,589.00	
Stock in Athletic Store	285.68	
Invested in Sheep ³	1,055.29	
		<u>\$6,138.99</u>

¹ Fees collected by the University at the request of the Associated Students and paid to the Board of Athletic Control in return for free admission of students to preliminary and practice games.

² Indebtedness of Union to Associated Students, transferred to Board of Athletic Control.

³ Book value, and including some supplies. Approximately the same as market value.

LIABILITIES

Due A. S. S. U., balance of fees.....	\$532.96	
Due E. B. McDonald, balance of account.....	524.12	
Due Board of Trustees, balance still due on \$15,000 loan.....	9,710.09	
Surplus account deficit		\$4,628.18
	<u>\$10,767.17</u>	<u>\$10,767.17</u>

DEFICITS

Deficit, August 31, 1918.....	\$10,924.75	
Surplus for year 1918-19.....	6,296.57	
	<u>6,296.57</u>	
Balance		\$4,628.18

LOAN ACCOUNT

Debt to the Board of Trustees of the University assumed by the Board of Control ¹		\$15,000.00
Paid from fees, \$1.00 per man per quarter: 1917-18.....	\$2,466.45	
1918-19.....	2,823.46	
Balance still due.....	9,710.09	
	<u>\$15,000.00</u>	<u>\$15,000.00</u>

On November 26, 1919, the Board voted to transfer one-half of any balance of income remaining at the close of a fiscal year to the Stadium Fund, to be used for the extension and repair of structures on the athletic fields. This will apply to the balance reported above for the year 1918-19.

JOHN PEARCE MITCHELL,
Treasurer.

PUBLIC EXERCISES AND LITERARY CONTESTS

Because of conditions brought about largely by the war—conditions which relieved the Committee on Literary Contests of a large part of its former duties—it was deemed advisable to combine that committee with the Committee on Public Exercises. The Committee on Public Exercises and Literary Contests has, therefore, consisted of the members of both these committees as announced separately for the academic year 1918-19.

UNIVERSITY ASSEMBLIES

Since the action of the Academic Council, during the spring quarter a year ago, abolishing the 11 o'clock, Thursday, assembly hour, no effort has been made to arrange assemblies at regular intervals, but such meetings have been called at the discretion of the committee and when speakers could be secured. By announcing assemblies for different hours and

¹ Debt incurred by Associated Students and taken over by the Board of Athletic Control at the time of its organization.

days the committee has endeavored to avoid repeated interruption of the sessions of any recitation or lecture courses. The following assemblies have been held during the year. The meetings were held in the Assembly Hall unless otherwise stated.

- October 1. On the North Oval. Students' Army Training Corps assembly held at the request of the War Department Committee on Education and Special Training. Addresses were given by President Wilbur and Major-General Eli A. Helmick. The Orders of the Day and messages from President Wilson and other officials were read by Captain Parker.
- October 31. At the Bandstand. Professor Harper of Boston University. "With the Americans at Chateau Thierry."
- November 14. Dr. William Stidger of San Jose. "Silhouettes From the Front."
- December 4. Mr. Sherwood Eddy. "The War and Reconstruction."
- January 7. Assembly of Welcome. Addresses by President Wilbur, Dean Bradford, and Chaplain Gardner.
- January 24. Baroness Frances Wilson Huard. "My Year Among the Fighters."
- February 12. Lieutenant Jean Alcide Picard. "The Spirit of France."
- February 19. President A. Lawrence Lowell of Harvard University. "The Present Duty of the Universities."
- February 20. Dr. Charles R. Brown of Yale University. "The Moral Issue of Peace."
- March 7. Mr. Joseph Bonnet. An organ recital in the Memorial Church.
- April 2. Major Ian Hay Beith. "The American Army in France."
- April 16. Mr. Will Irwin. "Observations on the Situation in Europe."
- April 23. War Memorial Assembly. Speakers, Professor W. F. Durand, Professor A. M. Cathcart, Leroy King, '19; Leslie C. Rogers, '18, and Miss Ruth Chandler, '19.
- May 8. Mrs. Diana Watts. "Demonstrations of Greek Statues in Movement."
- May 19. President William T. Foster of Reed College. "With Three Armies in France."
- May 30. In the Memorial Church. Memorial Day service. Address by Dean David P. Barrows of the University of California.

TUESDAY EVENING MEETINGS

The Tuesday Evening Meetings have been held throughout the year with the exception of a few weeks during the autumn quarter when they were discontinued because of the epidemic of influenza. The meetings were well attended and the interest manifested in them by the people of the community justifies their continuance. On several occasions the audiences could not be accommodated in the Little Theatre and it was necessary to adjourn to the Assembly Hall or the Memorial Church. Because of the limited seating capacity of the Little Theatre several concerts of the course were announced for the Assembly Hall. Even during the summer quarter the attendance, though naturally smaller, was still large enough to justify holding the meetings, and was larger at the

end of the quarter than at the beginning. The list of meetings for the year follows:

- October 8. Dr. Bernard Moses, Emeritus Professor of History of the University of California, a lecture, "German Autocracy and the Consent of the Governed."
- October 15. Mr. Charles Woods, F. R. G. S., an illustrated lecture, "The Cradle of the War."
- November 12. United War Work Campaign Assembly. Speakers: Dr. Charles T. Wheeler of the Salvation Army in France, the Reverend Joseph M. Gleason, Vicar General of Catholic Chaplains of the United States Army and Navy.
- November 19. Dr. Arthur William Meyer, Professor of Anatomy, an illustrated lecture, "Sidelights on Problems of Health."
- November 26. Dr. Rudolph Schevill of the Romanic Languages Department of the University of California, an address, "Spain Today and Her International Problems."
- December 3. Capt C. L. Lowman, M.D., of the Base Hospital, Camp Fremont, an informal address, "Observations on Reconstruction Work in Canada."
- December 10. Professor Charles Andrew Huston, Dean of the Stanford Law School, a lecture, "Our Nearest Neighbor."
- January 7. Mr. Lawrence Strauss, tenor, and Miss Theresa Ehrmann, pianist, a concert.
- January 14. Mr. John W. Barry of the San Francisco Call, a lecture, "Speaking and Writing."
- January 21. Professor John S. P. Tatlock of the Department of English, a lecture, "Attacks on Lincoln and Other Presidents."
- January 28. Dr. Clark W. Hetherington, State Supervisor of Physical Education, a lecture, "The War and Physical Education."
- February 4. Dr. David Starr Jordan, an illustrated address, "Tusitala in Samoa."
- February 11. Mr. Elisha Brooks, an address, "Crossing the Plains in 1850."
- February 18. Miss Grace L. Becker, 'cellist, and Miss Madeline Becker, pianist, a concert.
- February 25. Dr. Harry B. Reynolds, an informal narrative, "Experiences with the First Army in the Argonne Offensive."
- March 4. Mr. Charles J. Woodbury, personal friend of Ralph Waldo Emerson, a lecture-talk, "Emerson and His Friends."
- March 11. Mr. Nathan J. Landsberger, violinist, and Mr. Warren D. Allen, pianist, a concert.
- April 8. Dr. A. Carnoy of the Department of Romanic Languages of the University of California, a lecture, "Social Conditions in Belgium."
- April 15. Mr. W. H. Shockley, of Palo Alto, an illustrated lecture, "Northeastern Siberia and the Chukchees."
- April 22. Miss Dorothy Pasmore, 'cellist, Mrs. William Poyner, violinist, Mrs. Suzanne Pasmore-Brooks, pianist, a concert.
- April 29. Mr. Paul U. Kellogg, Editor of The Survey, a lecture, "The New Labor Diplomacy."
- May 6. Stanford Music Club, Chamber Concert.
- May 13. Mr. B. R. Baumgardt, an illustrated lecture, "Crucified Russia."

- May 20. Dr. David Starr Jordan, a lecture, "The Future of Ireland."
 May 27. Rev. G. A. Johnston Ross, D.D., a lecture, "Scotland in War-time: Observations and Reflections."
 June 24. Professor Edwin Greenlaw, of the University of North Carolina, an address, "Some National Ideals in English Literature."
 July 1. President Stephen B. L. Penrose of Whitman College, an address, "The Limits of Democracy."
 July 8. Professor Bailey Willis, an address, "South American Peace Problems."
 July 15. Mr. Ben. S. Allen of the Sacramento Union, late of the U. S. Food Administration, an address, "How our Democracy Accepted Food Conservation."
 July 22. Rev. Caleb S. S. Dutton, of San Francisco, a lecture, "New Horizons."
 July 29. Professor Warner Fite of Princeton University, a lecture, "Our Biological Ethics."
 August 5. Professor Alfred Coester of New York, a lecture, "Observations in Chile, Argentine and Brazil, During the Great War."
 August 12. Dr. E. B. Copeland of Chico, a lecture, "The State in the Light of Natural Ethics."
 August 19. Mme. Ina Wright Herbst, soprano, and Professor Gottfried Herbst, violinist, (members of the faculty of the State College of Washington), Mrs. Charles Moser, accompanist, a recital.
 August 26. Professor Burges Johnson of Vassar College, a lecture, "The American Newspaper—Its Present and Future."

MEMORIAL EXERCISES

A service in memory of Theodore Roosevelt was held in the Memorial Church on the evening of February 9th. The address was given by Mr. Chester Rowell of Fresno. Special music was provided and the service was concluded with the sounding of taps.

On May 30th appropriate exercises in observance of Memorial Day were held in the Memorial Church. The tragedy of the war and the sacrifice of lives of many members of the University and the community rendered the service peculiarly significant and impressive. Music was furnished by the Memorial Church Choir and by an instrumental trio. The address was given by Dean David P. Barrows of the University of California.

DEBATES

But two intercollegiate debates were held during the year, one with the University of Southern California in May, and the debate for the Joffre Medal in April. Arrangements for these debates were made with the help and coöperation of the Committee on Debating of the Student Body. At the suggestion of the Committee on Public Exercises the specific subject for the Joffre discussion, instead of being selected from the general question by a joint faculty committee of Stanford and the University of California, was determined by Professor James Milton O'Neill of the University of Wisconsin. The question submitted by Pro-

fessor O'Neill was announced to the contestants two hours before the time set for the debate. The debating activities of the University have been somewhat interfered with by the war, but it is hoped that the usual number of debates may be scheduled for the coming year and that interest in this work will rapidly return to normal.

DRAMATICS

Two or three years ago arrangements were made with representatives of student dramatic societies and other organizations concerned so that all manuscripts of plays selected for presentation at the University should be submitted to the Committee on Public Exercises for approval, and that the committee should be consulted about the selection of coaches and the make-up of casts. The various organizations offering plays during the year have complied readily with these regulations when reminded of them and in general have manifested a cordial spirit of co-operation in the interest of clean and worthy productions.

COMMENCEMENT

Commencement exercises were held in the Memorial Church on Monday, June 16th. Addresses were made by Dr. Paul Shorey of the University of Chicago and by President Ray Lyman Wilbur. Besides the usual conferring of degrees, honor certificates were conferred on about eight hundred students who had been in service during the war. Certificates were also presented to the parents of several students who gave their lives in the service.

MEMORIAL HALL

Before closing this report mention should be made of the decision of the Committee of Fifty to start a campaign to raise funds for the building of a Memorial Hall and Auditorium. This is a matter in which the Committee on Public Exercises is vitally concerned, and it is earnestly hoped that the efforts of the committee will meet with a prompt and substantial response. An auditorium with a seating capacity of seven or eight hundred is much needed. The Little Theatre, while well adapted to small audiences, is inadequate for gatherings numbering more than two hundred and fifty people, while an audience of from three to six hundred people is well-nigh lost in the large Assembly Hall. Moreover, the acoustics of the Assembly Hall are not good when the place is but partially filled. An auditorium such as is contemplated by the Committee of Fifty will serve as a worthy and appropriate memorial and will, at the same time, meet a pressing need of the University.

LEE EMERSON BASSETT.
Chairman.

PUBLIC HEALTH

The members of the Public Health Committee for the year 1918-19, were J. P. Mitchell, Harriet Bradford, J. E. McDowell, Clelia D. Mosher, and H. R. Stolz. Of these, J. P. Mitchell, Harriet Bradford, and H. R. Stolz were also members of the Board of Directors of the Students' Guild. Celia D. Mosher and H. R. Stolz were absent for the year on Government service. Dr. Charles E. von Geldern, acting medical adviser for men in the absence of Dr. H. R. Stolz, served with the committee and was also appointed deputy county health officer.

In September, 1918, an epidemic of influenza occurred in the University community. A special isolation hospital was opened on the campus for women, and it, as well as the Students' Guild Isolation Hospital and the Peninsula Hospital in Palo Alto, were taxed beyond their normal capacities. Such preventive measures as were possible were enforced, and the epidemic proved to be of moderate severity compared to the experiences of other communities. The necessary funds for handling the situation were obtained from the reserve fund of the Students' Guild, and the value of this fund as a protection to the community was clearly demonstrated. The epidemic subsided in December and the health of the community was nearly normal throughout the rest of the year.

The Students' Guild was able to meet the demand upon its services during the year only by drawing heavily upon its reserve. The monetary loss during the year was about \$10,000, which was caused by the influenza epidemic, and an abnormal number of minor contagious diseases which required the continuous operation of the Isolation Hospital.

In connection with the influenza epidemic the following data for October, November, and December, 1918, are of interest:

Hospital	Number of Patients	Group	Number of Days Nursing
Isolation	96	Civilian men	1,029
Women's	49	Civilian women	305
Peninsula	93	S. A. T. C.	899
Lane	21		
Total	259	Total	2,233

Group	Number of Patients	Hospital	Number of Deaths
Civilian men	107	Isolation	3
Civilian women	49	Women	2
S. A. T. C.	103	Peninsula	1
Total	259	Total	6

The data include one death from typhoid, others due to influenza. No data are available covering S. A. T. C. patients sent to Base Hospital at Camp Fremont.

Two gifts were received by the Students' Guild during the year. Mr. James L. Flood gave fifty shares of stock in the Peninsula Hospital

of Palo Alto, and Dr. George B. Somers ten shares of stock in the same hospital. These gifts are much appreciated for their intrinsic value, and for the influence which they enable the Guild to exercise upon the Peninsula Hospital on which it is dependent for much of its local service.

JOHN PEARCE MITCHELL,
Chairman.

SCHOLARSHIP

Because of unusual conditions due to the influenza and requirements of the Students' Army Training Corps no scholarship record has been compiled for the autumn quarter.

The record of action by the committee for the winter, spring and summer quarters is as follows:

Action—	Winter	Spring	Summer
Withdrawals	24	17	7
First Failure	49	42	17
Probation other than first failure.....	54	92	13

Of the total of 156 failures and withdrawals for the year, 142 were men and 14 were women; or, stated in percentages of the number of each group registered in the University, 8.9 per cent of the men failed and 2 per cent of the women.

This year the residence statistics are given for each quarter instead of being grouped for the entire year. Because of this change of method, together with the lack of any statistics for the autumn quarter, comparative statistics are not available.

In the following table men and women are grouped separately by residence for each quarter, the percentage of failures and withdrawals being given for each group:

	Winter		Spring		Summer	
	Total Number	Per Cent Failing	Total Number	Per Cent Failing	Total Number	Per Cent Failing
Men—						
Palo Alto and Mayfield	102	2.9	115	3.4	72	1.3
Encina and Sequoia Halls	367	7.3	401	3.9	89	7.8
Private Residences on Campus.....	86	1.0	99	4.0	59	0.0
Commuters from San Jose, etc.....	59	10.1	73	1.3	41	2.4
Fraternalities	306	8.8	329	9.1	81	1.4
Women—						
Palo Alto and Mayfield	44	2.2	42	0.0	39	2.4
Roble and Alvarado Halls.....	180	1.1	174	0.0	27	3.7
Private Residences on Campus.....	23	0.0	18	5.5	29	3.4
Commuters from San Jose, etc.....	28	0.0	30	0.0	22	0.0
Sororities	241	1.6	235	1.2	37	0.0

The statistics presented above are based on actual scholarship deficiencies, while the tables which follow give the comparative scholarship ratings of the undergraduate students according to living groups, organizations, societies, etc., based on the grade point system which was adopted in 1916-17.

COMPARATIVE SCHOLARSHIP STATISTICS OF UNDERGRADUATE STUDENTS,
OF STANFORD UNIVERSITY, FOR THE YEAR 1918-1919

GENERAL AVERAGES	Average Grade Points Per Group		
	Year	Winter Quarter	Spring Quarter
University	1.45	1.42	1.49
Women	1.69	1.67	1.71
Men	1.31	1.26	1.38
Non-Sorority	1.74	1.72	1.77
Sorority	1.64	1.63	1.66
Non-Fraternity	1.42	1.38	1.46
Fraternity	1.13	1.03	1.22

FRATERNITIES

ORGANIZATION	Rank			Average Grade Points Per Group		
	Year	Winter Quarter	Spring Quarter	Year	Winter Quarter	Spring Quarter
Theta Delta Chi.....	1	2	2	1.45	1.42	1.48
Alpha Tau Omega.....	2	4	1	1.44	1.30	1.62
Kappa Sigma	3	3	5	1.38	1.33	1.42
Kappa Alpha	4	1	12	1.36	1.52	1.18
Sigma Nu	5	10	3	1.34	1.05	1.45
Theta Xi	6	7	6	1.28	1.16	1.39
Delta Upsilon	7	8	7	1.26	1.12	1.38
Beta Theta Pi.....	8	6	10	1.21	1.19	1.21
Alpha Sigma Phi	9	11	18	1.18	.97	1.37
Sigma Chi	10	5	14	1.17	1.20	1.15
Chi Psi	11	17	4	1.15	.84	1.43
Phi Kappa Psi	12	9	11	1.13	1.06	1.20
Sigma Alpha Epsilon.....	13	16	.....	1.08	.....	1.08
Phi Gamma Delta	14	12	13	1.06	.96	1.16
Phi Delta Theta	15	16	9	1.05	.87	1.24
Delta Chi	16	14	17	.99	.91	1.07
Phi Kappa Sigma	17	15	20	.91	.88	.94
Delta Kappa Epsilon	18	13	21	.93	.94	.91
Alpha Delta Phi.....	19	18	18	.89	.73	1.06
Zeta Psi	20	20	15	.88	.60	1.14
Delta Tau Delta	21	19	19	.84	.71	.95

CLUBS AND MISCELLANEOUS (MEN)

El Camino	1	2	1	1.58	1.42	1.73
Commuters	2	3	2	1.49	1.40	1.57
Encina	3	4	4	1.43	1.39	1.47
Campus Men (Non-Fraternity).....	4	6	3	1.41	1.31	1.50
Palo Alto Men	5	1	5	1.38	1.43	1.33
Japanese Students' Association	6	5	7	1.26	1.35	1.19
Chinese Club	7	7	6	1.22	1.16	1.29

ORGANIZATION	Rank			Average Grade Points Per Group		
	Year	Winter Quarter	Spring Quarter	Year	Winter Quarter	Spring Quarter
SORORITIES						
Sigma Kappa	1	2	1	1.82	1.75	1.90
Alpha Omicron Pi	2	1	5	1.78	1.84	1.70
Gamma Phi Beta	3	4	2	1.77	1.70	1.83
Pi Beta Phi	4	3	3	1.75	1.74	1.76
Alpha Phi	5	6	4	1.66	1.60	1.72
Kappa Alpha Theta	6	8	6	1.59	1.55	1.64
Delta Delta Delta	7	5	10	1.57	1.69	1.45
Delta Gamma	8	7	8	1.56	1.58	1.54
Chi Omega	9	10	7	1.54	1.45	1.62
Kappa Kappa Gamma	10	9	9	1.48	1.46	1.49

CLUBS AND MISCELLANEOUS (WOMEN)

Campus Women (Non-Sorority)	1	1	1	2.07	1.98	2.13
Palo Alto Women	2	2	2	1.92	1.80	2.03
Women Commuters	3	3	3	1.74	1.77	1.71
Roble	4	4	4	1.68	1.68	1.69

HONOR AND PROFESSIONAL SOCIETIES

Phi Beta Kappa	1	1	1	2.13	2.06	2.23
Alpha Chi Sigma	2	2	2	2.02	1.93	2.12
Phi Delta Kappa	3	7	3	1.92	1.71	2.05
Spanish Club	4	3	5	1.89	1.88	1.89
Theta Sigma Phi	5	4	7	1.78	1.82	1.74
French Club	6	8	4	1.74	1.60	1.89
Iota Sigma Pi	7	9	6	1.68	1.57	1.87
Phi Alpha Delta	8	6	8	1.62	1.72	1.50
English Club	9	5	9	1.61	1.73	1.47
Geology and Mining Society	10	13	11	1.49	1.13	1.22
Mech. Eng. Soc.	11	10	10	1.42	1.44	1.40
Phi Lambda Upsilon	12	11	14	1.26	1.36	1.00
Phi Delta Phi	13	12	12	1.19	1.21	1.17
Sigma Delta Chi	14	14	13	1.08	1.09	1.07

DEBATING AND LITERARY SOCIETIES

Wranglers	1	2	1	1.99	2.07	1.91
Delta Sigma Rho	2	1	3	1.85	2.08	1.60
Euphronia	3	4	4	1.59	1.58	1.60
1920 Quad	4	3	5	1.58	1.61	1.55
Nestoria	5	7	2	1.63	1.42	1.65
Chaparral	6	5	7	1.44	1.57	1.34
Daily Palo Alto	7	6	8	1.39	1.50	1.26
Press Club	8	8	6	1.32	1.28	1.36

STUDENT HONOR SOCIETIES

Cap and Gown	1	1	1	1.86	1.83	1.89
Quadrangle	2	2	3	1.25	1.29	1.21
Skull and Snakes	3	3	2	1.23	1.23	1.23

ORGANIZATION	Rank			Average Grade Points Per Group		
	Year	Winter Quarter	Spring Quarter	Year	Winter Quarter	Spring Quarter

DRAMATIC CLUBS

Ram's Head	1	1	1	1.50	1.50	1.49
Sword and Sandals	2	2	2	1.39	1.37	1.40

MUSICAL ORGANIZATIONS

Schubert Club	1	1	1	1.74	1.74	1.73
Stanford Music Club	2	2	2	1.71	1.69	1.72
Stanford Band	3	3	3	1.03	.93	1.17

ATHLETIC TEAMS

Varsity Basketball	1	1	1	1.43	1.45	1.41
Varsity Track	2	2	2	1.40	1.41	1.38
Varsity Baseball	3	3	4	1.15	1.22	1.09
Varsity Football	4	5	3	1.04	1.00	1.10
Freshman Basketball	5	4	6	.98	1.05	.92
Freshman Track	6	6	5	.88	.81	.95

The following loan funds are administered by the Committee on Scholarship:

Horace Davis Fund (\$10,000) Interest.....	\$850.82
William Burton Barber Fund	6,569.80
Alumni Association Graduate Fund.....	245.00
Alumni Association Undergraduate Fund.....	500.00
Associated Students Undergraduate Fund.....	250.00
Harker Alumnae Association Fund.....	225.00
Class of 1906.....	100.00
Total	\$8,690.62

The general policy of the committee is to loan not more than \$100 to any one student. In all cases provision is made for repayment, without interest, not later than one year after date of graduation or withdrawal from the University.

During the current year loans to the amount of \$967 were granted to 13 individuals.

The various scholarships which are administered on the recommendation of the committee were awarded for the year to the following students:

ALUMNI JORDAN SCHOLARSHIPS IN MEDICINE

Earl Frederick Roth	Willits
A. B. Stanford, 1916	
Leonard Ramsey Thompson	Everett, Wash.
B. S., University of Washington, 1916	

LELAND STANFORD JUNIOR MEMORIAL SCHOLARSHIP

Leo Gregory Gianini, '21 (Mechanical Engineering).....San Francisco

W. J. DICKEY SCHOLARSHIPS

George Hurach Cloud, '19 (History)Fresno

Charles Leslie McCormick, '19 (History)Fowler

BERTHA HYDE BRALY ('97) SCHOLARSHIP

Emily Violet Smith, '19 (Chemistry)Los Altos

GEORGE E. CROTHERS ('95) LAW SCHOLARSHIP

Herman Hubert Hoss Corona

A. B. Stanford, 1918

Carmen Gertrude Hallmeyer, '20, (spring quarter).....Santa Clara

B. G. HIGLEY ('99) SCHOLARSHIP

Clifford Courtney Bunds, '20 (Chemistry)Santa Clara

MRS. MCDOWELL ('07) ROBLE CLUB SCHOLARSHIP

Elinor Marie Eppich, '19 (Economics)Denver, Colo.

CHARLES HENRY GILBERT,
Chairman.

STUDENT AFFAIRS

The Committee on Student Affairs for the year 1918-19 consisted of the following members of the faculty: Everett P. Lesley, chairman; William R. Eckart, Marion R. Kirkwood, Halcott C. Moreno, Victor J. West, Miss Harriet Bradford, Dean of Women.

The committee held meetings on thirty-one days, and considered the following cases of student misconduct:

No. of Students	Offense	Discipline Recommended
2	Cheating.....	Suspension for one quarter.
5	Mutilating University buildings.....	Suspension for one quarter.
1	Dishonesty in business transactions.....	Denied further registration.
44	Improper conduct.....	Suspension for one quarter.
11	Carelessness.....	Reprimanded by President.

The Women's Student Council consisted of: Ruth Chandler, chairman; Ruth Searcy, Dorothy Hanna, Irene Bonnett and Ellen Calhoun. The following cases were considered:

No. of Students	Offense	Discipline Recommended	Action of Committee
2	Breaking conference regulations.....	Hours added to graduation.....	Approved
1	Cheating.....	Evidence insufficient to convict.....	Approved

The committee recommended re-admittance to the University of eight men students under sentence of indefinite suspension. These men presented evidence of creditable war service and desired to rehabilitate themselves in the university community. A number of requests for off-campus dances were received, which the committee recommended be denied.

At the close of the third quarter the committee made a report to the President on the following subjects:

House matrons in fraternities.

Housing of Freshman men students.

Freshman discipline.

Functions of the Committee on Student Affairs and Dean of Men.

As a result, it is understood that for the coming year the functions of the committee are to be purely legislative and advisory, and that the Dean of Men will assume the administrative and judicial functions with respect to conduct of men students, which the committee have found incompatible with an instructor's position.

During the year there have been some measures taken toward the re-establishment of a men's student government. A student council, consisting of officers of the student body, established individual responsibility for mutilation of University buildings, and the newly organized fraternity conference exhibited a willingness to co-operate with the committee in bringing about desired conditions. It is believed that in the coming year, with the return of many of the older men students who have been absent in military service, some form of men's student control will be established.

EVERETT PARKER LESLEY,
Chairman.

VOCATIONAL GUIDANCE

The members of the committee appointed for the year 1918-19, were J. G. Brown, chairman; J. C. L. Fish, C. A. Huston and V. J. West. In January, Dean Harriet Bradford was appointed in place of Professor Hall who was absent on leave. A sub-committee composed of Clara S. Stoltenberg, chairman; Harriet Bradford, Mary I. McCracken and Theresa P. Russell was appointed to take charge of the vocational guidance of women.

During the autumn quarter the committee did very little work on account of the impossibility of getting interest from the students during the period of the S. A. T. C.

Ever since the organization of the committee it has been the intention to publish a bulletin of vocational information for the use of students. Material for this purpose was gathered from alumni and two attempts to get coöperation from the departments were made. The de-

mand finally became so great that the committee took the matter up again during the winter quarter and perfected plans for the preparation of such a bulletin. The chairman of the committee was relieved from teaching duties during the spring quarter in order that he might give his entire time to the preparation of the bulletin. About fifty different vocations were selected and articles were prepared by persons familiar with the vocations and with the plan of organization of the University. The bulletin has been issued in the regular University Bulletin series and is for free distribution.

During the preparation of the bulletin the committee did not think it advisable to undertake the work which was started two years ago and was dropped on account of the war. However, the section of books in the Library has been materially enlarged, and it is expected that the talks on vocations and the conferences between students and faculty members will be resumed during the coming year.

The sub-committee has continued the studies which were started by the Committee on War Courses for Women, and in conjunction with the Vocations Committee of the Y. W. C. A. has carried through the Second Vocational Conference on Opportunities other than Teaching Open to Women. This Conference was held on May 24th with the following program:

Qualifications for Professional Work:—Mrs. Elizabeth Burritt Snell, Appointment Secretary, Stanford University.

Women in Business, with special emphasis on architectural work:—Miss Clarice Moise, with Neal T. Childs Co., Landscape Architects, San Francisco.

Women in Industry:—Miss Mary J. Corbett, Recruiting Secretary, Young Women's Christian Association.

Department Store Education:—Miss Mabel Schopbach, Educational Director, Hale & Co., San Jose.

Women in Journalism:—Miss Perle Stanford, with the San Francisco Chronicle.

Bacteriological Laboratory Work:—Professor Clara S. Stoltenberg, Stanford University.

Medicine and Nursing as Professions for Women, with special emphasis on Public Health Work:—Dr. Adelaide Brown, State Bureau of Public Health.

Women in Chemistry:—Miss Jessie V. Berry, formerly City Chemist of Oakland, at present with Hercules Powder Company.

Clinical Social Service:—Mrs. Katherine I. Barnett, Social Service Director, Stanford Clinics, San Francisco.

JOSEPH GRANT BROWN,
Chairman.

APPENDIX IV.

MISCELLANEOUS ADMINISTRATIVE REPORTS

THE REGISTRAR

The total number of students in attendance in 1918-19 (including the summer quarter) was 2267. Of these 1214 had previously been in attendance; 1053 were new students. As compared with 1917-18, there was an increase in old students of 137 and in new students of 227, making a total advance over the previous year of 364. The largest attendance of any one quarter was 1558 (spring quarter). This was 58 larger than the autumn quarter and is explained by the close of the war and the return of former students. The number of entering men in October was somewhat larger than normal due to the establishment by the Government of the Students' Army Training Corps; naturally a considerable number of these students did not return at the beginning of the winter quarter.

The regular work of the autumn quarter was interrupted by two causes: (1) the exactions of the S. A. T. C., and (2) the influenza, which was serious in its effects both upon attendance and scholarship. For this reason the usual scholarship ratings and comparison of former years are omitted from this report.

The second summer quarter under the four-quarter system registered a total of 521 students. Of these 411 had previously been registered in the University, 110 were new students. Of these 521 students, 169 were in graduate standing, 352 in undergraduate standing. Of the 110 new students, 38 were graduates, 43 entering with advanced standing, 23 freshmen, and 6 specials. About half as many courses were offered as during the spring quarter. It should be noted that no "popular" courses were offered, that there were no courses in Engineering, and that the following departments were either not represented or offered comparatively few courses: Applied Mathematics, Geology, Mathematics, Physics, and Psychology. The departments offering relatively full programs were: Chemistry, Economics, Education, English, German, Law, and Romanic Languages. The emphasis was placed very largely on advanced and graduate work. The small number of new students attracted to the summer quarter may be attributed in large part to the restricted program offered, the omission of popular courses, and the fact that there were few additions to the regular staff of instructors.

COMPARATIVE REGISTRATION, 1914-15 TO 1918-19

	1914-15	1915-16	1916-17	1917-18*	1917-18†	1918-19
Old students	1,325	1,399	1,449	1,077	269	1,214
New students	731	801	738	826	97	1,053
	2,056	2,200	2,187	1,903	366	2,267
Percentage of returning students	69.5	68.0	65.8	56.5	.....	53.5
From California	1,525	1,611	1,629	1,441	.....	1,728
From other states and countries	531	589	558	462	.....	539
Percentage outside California	25.7	26.7	27.0	24.2	.....	23.7

AVERAGE AGE OF MATRICULATES

	1914-15	1915-16	1916-17	1917-18*	1917-18†	1918-19
Graduates	27.3	28.5	27.6	29.6	33.5	30.0
Advanced standing	21.6	21.7	19.8	21.2	28.5	23.8
Freshmen	19.4	19.3	19.3	19.2	18.9	19.6
Specials	24.3	24.9	23.2	22.9	37.4	25.1

AGE OF FRESHMEN AT MATRICULATION

	1914-15	1915-16	1916-17	1917-18*	1917-18†	1918-19
Under 17	8	16	17	3	1	19
17-18	49	59	83	79	6	87
18-19	109	142	141	137	3	239
19-20	126	133	120	128	1	173
Over 20	155	123	112	97	2	145
Totals	447	473	473	444	13	663

DISTRIBUTION OF ENTERING CLASS

	1916-17	1917-18*	1917-18†	1918-19
From Colleges—				
Graduates	69	67	36	80
With advanced standing	143	157	25	221
Without advanced standing	2	.....	.....	6
	214	224	61	307
From normal schools	12	20	19	26
From high school junior colleges	18	31	1	37
From preparatory schools—				
On recommendation (wholly or mainly)				
In full standing	471	442	13	659
Wholly on examination	2	2	.....	.....
Special students	21	9	3	24
	738	728	97	1,053

* Omitting summer quarter.

† Summer quarter only.

DISTRIBUTION OF ENTERING CLASS, 1918-19
FROM COLLEGES, ETC.

Albion College	1	Rose Polytechnic Institute	1
Beloit College	1	Shansi University (China).....	1
Blackburn College	1	Soochow University (China).....	1
Bowdoin College	1	Stout Institute	1
Brown University	1	Syracuse University	1
California College of Pharmacy.....	1	Throop College of Technology	3
Canton Christian College	4	University of Arizona	2
Carleton College	2	University of Arkansas	1
Case School of Applied Science	1	University of Berlin	1
Coe College	1	University of British Columbia	2
College of the Pacific	33	University of California	55
Colorado College	3	University of Chicago	6
Colorado State Teachers' College.....	1	University of Colorado	1
Columbia Teachers' College	1	University of Idaho	1
Columbia University	4	University of Illinois	1
Cornell University	2	University of Kansas	1
Dalhousie University	2	University of Michigan	6
Dartmouth College	1	University of Missouri	2
Denison University	1	University of Nebraska	2
De Pauw University	1	University of Nevada	4
Grinnell College	1	University of New Mexico	3
Hamlin University	1	University of North Dakota	1
Harvard University	6	University of Oklahoma	1
Imperial University (Tokyo)	2	University of Oregon	4
Indiana University	1	University of Pennsylvania	1
Kansas State Agricultural College	2	University of Petrograd (Russia)	1
Kukamoto Higher School of Tech- nology	1	University of Philippines	2
Lake Forest College	1	University of Portugal	1
Michigan College of Mines	1	University of Redlands	5
Mills College	7	University of Santa Clara	6
Montana State College	1	University of Southern California	15
Mount Holyoke College	1	University of Texas	2
Nebraska Wesleyan	1	University of Toronto	1
New Mexico Military Institute	1	University of Utah	6
Northwestern University	1	University of Virginia	1
Oberlin College	1	University of Washington	8
Occidental College	6	University of Wisconsin	3
Ohio State University	3	University of Wooster	1
Oregon Agricultural College	3	University of Wyoming	1
Pacific University	1	Vassar College	2
Park College	1	Wabash College	1
Philadelphia College of Pharmacy.....	1	Washburn College	1
Pomona College	10	Washington State College	10
Princeton University	1	Whitman College	1
Radcliffe College	1	Whittier College	2
Reed College	3	Wilson College (Bombay, India).....	1
Rice Institute	1	Yale College of China	1
		Yale University	2

FROM STATE NORMAL SCHOOLS

Cape Girardeau (Mo.).....	1	San Diego	2
Cheney (Wn.).....	1	San Jose	16
Chico	1	Santa Barbara	1
Los Angeles	2	Silver City, N. M.	1
Pittsburgh (Kans.)	1		

FROM HIGH SCHOOL JUNIOR COLLEGES

Azusa	2	Red Bluff	3
Chaffee Union (Ontario)	1	Riverside	1
Dominican College, San Rafael	1	Sacramento	1
Eureka	1	San Diego	4
Fresno	5	Santa Ana	3
Hollywood	4	Santa Barbara	1
Los Angeles	7	Turlock	1
Placer	1	Yreka	1

FROM PREPARATORY SCHOOLS

Aberdeen (Wn.) H. S.	1	Delta (Colo.) H. S.	1
Agency (Iowa) H. S.	1	East Denver (Colo.) H. S.	1
Alameda H. S.	2	Detroit (Mich.) N. W. H. S.	1
Albany H. S.	1	Dinuba H. S.	3
Alhambra H. S.	3	Dunlap (Iowa) H. S.	1
Alturas H. S.	2	Durango (Colo.) H. S.	1
American Falls (Idaho) H. S.	1	Ellensburg (Wn.) H. S.	1
Analy H. S.	1	Elliott (Iowa) H. S.	1
Astoria (Oreg.) H. S.	1	Ely (Nev.) H. S.	1
Antioch H. S.	2	Erie (Pa.) H. S.	1
Ateneo de Manila H. S.	1	Eureka H. S.	3
Auburn H. S.	3	Eureka (Utah) H. S.	1
Bakersfield H. S.	2	Fair Oaks H. S.	4
Belmont H. S.	2	Fowler H. S.	2
Belton (Tex.) H. S.	1	Fresno H. S.	10
Berkeley H. S.	1	Ft. Worth (Tex.) H. S.	1
Bethlehem (Pa.) Prep.	1	Gilroy H. S.	2
Bisbee (Ariz.) H. S.	1	Glendale H. S.	2
Bishop School, La Jolla.	1	Grand Junction (Colo.) H. S.	1
Boise (Idaho) H. S.	6	Great Falls (Mont.) H. S.	2
Brentwood H. S.	2	Gridley H. S.	1
Burley (Idaho) H. S.	2	Hayward H. S.	1
Butte (Mont.) H. S.	3	Hebron (Nebr.) H. S.	1
Calgary (Can.) H. S.	1	Hilo (H. T.) H. S.	1
Campbell H. S.	4	Hollister H. S.	5
Canon City (Colo.) H. S.	2	Hollywood H. S.	18
Carlisle (Ind.) H. S.	1	Holton Arms School (Wn., D. C.)	1
Carson City (Nev.) H. S.	1	Horance Mann School (N. Y. C.)	1
Cascadilla (N. Y.)	1	Hoquiam (Wn.) H. S.	2
Chaffee Union (Ontario)	1	Huntington Park H. S.	2
Chico H. S.	2	Imperial H. S.	1
Chippewa Falls (Wis.) H. S.	1	Indianapolis (Ind.) Man. Tr.	1
Clatskanie (Ore.) H. S.	1	Jerome (Ariz.) H. S.	1
College Academy	1	Kankakee (Ill.) H. S.	1
College Park Academy	1	Kansas City (Mo.) Central H. S.	1
Columbus (Kans.) H. S.	1	Kearny (Neb.) H. S.	1
Compton H. S.	1	Kemper Military Inst. (Mo.)	1
Corning H. S.	1	Kingsburg H. S.	2
Corona H. S.	1	Klamath Co. (Ore.) H. S.	1
Coronado H. S.	1	Laguna (P. I.) H. S.	1
Covelo H. S.	1	Lake Forest (Ill.) Acad.	1
Covina H. S.	2	Le Grand H. S.	2
Creston (Iowa) H. S.	1	Lewiston (Idaho) H. S.	2
Crockett H. S.	1	Lindsay H. S.	2
Dallas (Tex.) H. S.	1	Lodi H. S.	1
Delano H. S.	4	Long Beach H. S.	14

Los Angeles H. S.	18	Pueblo (Colo.) H. S.	1
Los Angeles Harvard	4	Red Bluff H. S.	1
Los Angeles Manual Arts	8	Redding H. S.	1
Los Angeles Marlborough School	1	Redlands H. S.	2
Los Angeles Polytechnic	6	Redondo H. S.	1
Los Angeles Westlake Girls	2	Richmond H. S.	1
Los Angeles Wilmington	2	Riverside H. S.	4
Los Gatos H. S.	3	Roseville H. S.	1
McKinley (Honolulu, H. T.) H. S.	1	Roswell (N. M.) H. S.	2
Mankato (Kans.) H. S.	1	Sacramento H. S.	4
Marfa (Tex.) H. S.	1	St. Helena H. S.	1
Martinez H. S.	1	St. John (Wn.) H. S.	1
Marysville H. S.	2	Salem (Ore.) H. S.	1
Memphis (Tenn.) H. S.	1	Salinas H. S.	4
Merced H. S.	1	Salt Lake (Utah) H. S.	2
Mercersburg Acad. (Pa.)	1	San Antonio (Tex.) H. S.	2
Meridian (Idaho) H. S.	1	San Bernardino H. S.	4
Middletown H. S.	1	San Francisco—	
Modesto H. S.	7	Miss Burke's School	2
Montebello H. S.	1	Cal. School Mech. Arts	14
Monterey H. S.	8	Cogswell H. S.	2
Mountain View H. S.	11	Girls H. S.	4
Myrtle Point (Ore.) H. S.	2	Hamlin School	1
Napa H. S.	4	H. S. of Commerce	1
Needles H. S.	1	Lowell H. S.	24
Newcastle (Wyo.) H. S.	1	Mission H. S.	2
Oakland—		Polytechnic H. S.	3
Fremont H. S.	1	Potter School	1
Technical H. S.	2	Sacred Heart College	1
University H. S.	1	San Jose—	
Oelwein (Iowa) H. S.	1	San Jose H. S.	29
Ohio Mechanical Inst.	1	Notre Dame Acad.	2
Omaha (Neb.) H. S.	2	Washburn School	5
Orange H. S.	4	San Mateo H. S.	14
Oroville H. S.	1	Santa Ana H. S.	1
Owensmouth H. S.	1	Santa Barbara H. S.	11
Oxnard H. S.	2	Santa Clara H. S.	5
Palo Alto—		Santa Cruz H. S.	1
Palo Alto H. S.	42	Santa Maria H. S.	1
Castilleja School	2	Santa Monica H. S.	2
Harker School	2	Santa Rosa H. S.	5
Manzanita Hall	3	Savannah (Mo.) H. S.	1
Pasadena H. S.	2	Seattle (Wn.), Franklin H. S.	1
Payette (Idaho) H. S.	1	Sebastopol H. S.	3
Perris H. S.	2	Selma H. S.	1
Petaluma H. S.	4	Shattuck Sch. (Faribault, Minn.)	1
Phillips Exeter Acad.	2	Shelton (Wn.) H. S.	1
Phoenix (Ariz.) H. S.	8	Sleepy Eye (Minn.) H. S.	1
Porterville H. S.	3	Sonora H. S.	5
Portland—		South Pasadena H. S.	1
Columbia Univ. Prep.	1	Spokane (Wn.)—	
Hill Military	1	Lewis & Clark H. S.	4
Jefferson H. S.	6	North Central H. S.	1
Lincoln H. S.	5	Stanberry (Mo.) H. S.	1
Washington H. S.	7	Stockton H. S.	3
Prescott (Ariz.) H. S.	1	Sutter H. S.	3
Provo (Utah) H. S.	1	Taft H. S.	1

Tekamah (Neb.) H. S.....	1	Weaverville H. S.....	1
Tulare H. S.....	12	Wheeling (W. Va.) H. S.....	1
Tulsa (Okla.) H. S.....	1	Whittier H. S.....	1
Turlock H. S.....	3	Willows H. S.....	2
Twin Falls (Idaho) H. S.....	3	Winnebago (Minn.) H. S.....	2
Victor (Colo.) H. S.....	1	Worcester (Mass.) So. H. S.....	1
Visalia H. S.....	1	Yakima (Wn.) H. S.....	1
Walnut Lane Sch. (Phila.).....	1	Yerington (Nev.) H. S.....	1
Watsonville H. S.....	7	Yuma (Ariz.) H. S.....	1

REGISTRATION OF STUDIES

Fifteen units constitute a normal quarter's work. The following was the actual registration of undergraduates during 1918-19. (The undergraduate students registered for the first term of the summer quarter are considered in these statistics as being registered for the whole summer quarter.)

		Number of Students Per Quarter			
		Autumn	Winter	Spring	Summer
For 1 unit.....	.....	.....	.....	.....	.....
2 .....	.....	.....	.....	.....	.....
3 .....	.....	1	.....	.....	.....
4 .....	.....	2	.....	.....	.....
5 .....	.....	1	.....	1	1
6 .....	.....	1	1	.....	2
7 .....	.....	1	4	1	.....
8 .....	.....	7	2	2	6
9 .....	.....	8	6	3	3
10 .....	.....	13	13	13	11
11 .....	.....	12	8	12	6
12 .....	.....	23	32	31	21
13 .....	.....	99	130	188	40
14 .....	.....	136	169	218	52
15 .....	.....	228	341	390	71
16 .....	.....	123	278	209	41
17 .....	.....	128	166	161	28
18 .....	.....	535	123	129	48
19 .....	.....	3	4	3	4
20 .....	.....	1	2	2	4
Totals .....	.....	1,322	1,279	1,363	338

STATISTICS OF GRADUATION

The total number of degrees conferred in 1918-19 (October, January, April, and June) was 237 distributed as follows:

	Ph. D.	M. D.	J. D.	A. M.	Eng'r	LL. B.	A. B.
Bacteriology and Experimental Pathology.....	2
Botany	2
Chemistry	1	.....	.....	3	1	.....	13
Economics	24
Education	2	.....	.....	4	.....	.....	6
Education (Graphic Art)	5
Engineering—
Civil Engineering	2	.....	6
Electrical Engineering	1	.....	.....	.....	.....	.....	.....
Mechanical Engineering	2	.....	14
English	5	.....	.....	22
Entomology	2	.....	.....	1
Geology and Mining	2	.....	.....	6
Germanic Languages	1	.....	.....	5
Greek	1
History	3	.....	.....	20
Latin	1	.....	.....	2
Pre-Legal Curriculum	22
Law	2	.....	.....	1	.....
Mathematics	2	.....	.....	4
Medicine	16	.....	.....	.....	.....	.....
Philosophy	1
Physics	1	.....	.....	1
Physiology	3
Pre-Clinical Group	7
Psychology	2
Romanic Languages	1	.....	.....	15
Zoology	1	.....	.....	1
Totals	4	16	2	26	5	1	183

O. L. ELLIOTT,
Registrar.

LIBRARIAN

During the year ending August 31, 1919, there have been added to the University Library an aggregate of 11,635 volumes. Although somewhat below the normal rate of increase, the quality of the accessions has been exceptionally good. Some of the more noteworthy items are the following:

R. Accademia dei Lincei, Rome. Atti 1847-1916. 106 volumes.

American microscopical society. Transactions, volumes 1-31, 1880-1912.

Asiatic society of Bengal. Journal, volumes 1-73, 1832-1905; Journal and proceedings, volumes 1-4, 1905-1908; Index, 1-23.

Cambridge philosophical society. Transactions, volumes 1-22, 1820-1916.

Canada. Parliament. Journals and Sessional papers. 1867/8-1916. 847 volumes.

The Gentleman's magazine, Phil. volumes 1-7. July 1837-December 1840.

- Gleanings in science, Calcutta. Volumes 1-3, 1829-1831.
- Istituto nazionale italiano. Memorie, 1806-13. Three volumes.
- Istituto Lombardo Veneto. Memorie, 1812-35. Five volumes.
- R. Istituto Lombardo di scienze e lettere, Milan. Giornale, 1841-1856; Atti, 1857-1863; Memorie, 1843-1917; Rendiconti, 1864-1916. 116 volumes.
- Kew. Royal botanical gardens. Bulletin of miscellaneous information. 1887-1912. 18 volumes.
- London journal of arts and sciences. Series 1-3; 1820-1839. Thirty-seven volumes.
- Manchester literary and philosophical society. Memoirs Series 1, 1785-1802, seven volumes; Series 2, 1805-1857, fourteen volumes; Series 3, volumes 2-8, 1865-1884; Series 4, 1888-1898, twelve volumes.
- Memoirs on mathematics and mathematical physics, 1832-1898. 111 parts in nine volumes.
- Migne, J. P. Patrologiae cursus completus: Series graeca. Paris, 1857-1904. 161 volumes.
- New England magazine. Edited by J. S. & E. Buckingham. Volumes 1-9, 1831-1835.
- Royal Irish academy. Transactions, volumes 1-23, 24, pt. 2, 25-28, 31-33; Cunningham memoirs, nine pts. in five volumes; List of papers of the Academy, 1785-1887. Dublin, 1787-1906.
- The Times, London. August 1854-June 1857; July 1872-December 1876; January 1881-December 1914; Palmer's Index, January 1864-September 1910; 1911-June 1914. 301 volumes.

The foregoing statement includes 392 volumes added to the Law Library, making a total of 22,577 volumes now belonging to that collection.

The volumes of the London Times listed above, together with portions of the file already in the library, give us a nearly complete run of this valuable contemporary record of world affairs from 1854 to the present. We were fortunate also in being able to secure a complete set of the public documents of the Dominion of Canada. Through the good offices of Dean Charles A. Huston the University will receive the documents hereafter as published.

Following is the statement of accessions:

Stanford University—

Volumes in library September 1, 1918.....	253,695
Added by purchase	7,327
Added by gift and exchange.....	1,585
Added by binding	1,374
<hr/>	
Total volumes added.....	10,286
Less volumes withdrawn.....	261
<hr/>	
Net increase	10,025
<hr/>	
Volumes in library August 31, 1919.....	263,720

Lane Medical Library—

Volumes in library September 1, 1918.....	45,161
Added by purchase	492
Added by gift and exchange.....	297
Added by binding	560
Total volumes added.....	1,349

Volumes in library August 31, 1919.....	46,510
Total volumes in University Library August 31, 1919.....	310,230

The expenditures for books, periodicals and binding according to the bills approved and transmitted to the Treasurer for payment are as follows:

Stanford University—

Books and periodicals:

On account Jewel fund.....	\$17,762.20
On account Law fees.....	1,813.21
On account Syllabus fees.....	229.89
On account T. W. Stanford Psychic literature fund.....	58.45
On account Lathrop fund for Californiana.....	35.20
Binding	1,831.00

Lane Medical Library—

Books and periodicals:

On account L. C. Lane and other funds.....	3,416.14
On account Barkan fund	195.30
On account Gibbons fund	67.02
Binding	905.28

Total	\$26,313.69
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It will be noted that the amount for binding for each library is unusually small. This is due to the fact that a large number of volumes which normally would have been completed are still in process, owing to congestion at the University Press, and the charge therefor has to be carried forward to next year's account.

Of the gifts received mention may be made here of Lieutenant Geroid Robinson's donation of thirty dollars to be expended for books. Mr. J. C. Cebrian has again placed us under obligations by a gift of fifty-seven volumes of Spanish literature. Mr. Timothy Hopkins has given a collection of photographs and other material relating to the early years of this university, together with the first twenty-one volumes of the journal "Life." Mr. A. C. Hooper presented thirty-six volumes; from the Charles Reining collection sixty-two volumes were received, and from Mr. S. P. McCrea a considerable collection of war pamphlets. Chancellor Emeritus David Starr Jordan continues to turn over to the library a large amount of material and Professor A. B. Shaw has given a large number of periodicals. From Mrs. L. M. Ritchie of Salt Lake City came a very rare file of the "Western Spy and Miami Gazette," a weekly newspaper published at Cincinnati from July 1806 to August 1808. To

Colonel Casey Albert Wood, M. R. C., U. S. Army, we are indebted for a copy of his work "The Fundus Oculi of Birds," and other important material.

At the opening of the fall quarter our efforts were devoted to the acquisition of material needed to give the War Issues course to the S. A. T. C. About 1500 volumes were purchased on rush orders and a large proportion of them had to come from the east by express. Following the signing of the armistice in November, the normal routine was rapidly restored.

The most significant event of the year from the library standpoint has been the completion and occupancy of the new building. Since it is the intention to issue shortly an illustrated booklet describing it, it is unnecessary to do so here. The problem of removal was complicated by the necessity of accomplishing it with the least disturbance of the work of the summer quarter. The transfer of the books was started on Monday, July 7th, and continued uninterruptedly through the week. The old building was closed to readers on Saturday evening and the new building was opened to them the following Monday morning, July 14th, the card catalogue, the contents of the Reference and Serial rooms together with the material in active use by classes having been transferred in the interim. The work of moving the remainder of the library then proceeded until it was entirely installed in the new building.

CLASSIFICATION AND CATALOGUING

The following summary of the work of this department is from the report of Miss Sutliff, chief cataloguer:

Number of volumes added to the shelf-list and the catalogue:

New (900 for Timothy Hopkins room).....	11,790
Old	708
Continuations from bindery.....	663
Total	13,161
 Recatalogued	 657
U. S. documents catalogued (titles).....	1,365
British documents (titles).....	90
Unclassed theses	318
Pamphlets (unclassified).....	876
War issues books prepared for use by the Catalogue department	2,045

Number of cards filed in the Catalogue:

Typed cards	35,940
Library of Congress cards.....	16,204
American Library Association cards.....	95
Harvard College Library cards.....	88
Total	52,327

To the Union Catalogue have been added:

Library of Congress slips (estimated).....	38,000
Harvard cards	3,840
British Museum slips.....	14,075
University of Chicago cards.....	2,575
Total	58,490

Copy for 162 titles has been supplied to the Library of Congress, and twenty-seven titles of incunabula have been contributed to the census undertaken by the Bibliographical Society of America.

REFERENCE DIVISION

Miss Hays, Reference Librarian

The establishment of the S. A. T. C. made the military interest the predominant one in the library, as elsewhere in the University. For the first quarter therefore, our work was simplified by being almost entirely along one line, every course of study, every subject, was related to the war, a coloring which was even reflected in the annual list of Faculty publications.

With the winter quarter, reconstruction plans began and the library resources were called on for vocational guidance and other educational problems, and the more general interests of debaters and others became prominent. But the emphasis has been on the live problems of society and government for which pamphlets, documents, and periodicals are in greatest demand.

Plans for the reading room in the new library were commenced as early as February. The change from a small room to one three times as large meant bringing in many books from the stacks, which had to be selected with care. No new books have been purchased as yet. There has been no attempt to fill the shelves and the expansion has followed the line of reference rather than reading books but about 550 titles have been added, including many sets of which we had kept previously only the latest volume, making a collection of some 10,000 volumes in all.

The routine work has been kept up as usual. The Daily Palo Alto index has been continued and an index to the Stanford Illustrated Review, from its appearance as an alumni organ, has been started.

MATERIAL CHECKED AND FILED .

	1916-17	1917-18	1918-19
*U. S. documents.....	5,650	10,513	11,890
*Foreign documents.....	306	822	2,105
State and city	1,564	3,216	2,376
College catalogues.....	700	634	507
†Pamphlets	1,200	2,267	2,325
Stanford collection.....	350	120	150
Totals	9,770	17,572	19,253

* Increase in these largely due to Food Administration publications and Canadian documents.

† Pamphlet as here used means non-serial and not a public document.

CARDS CHECKED AND FILED

	1916-17	1917-18	1918-19
Bibliography, typed and printed.....	1,500	940	639
U. S. catalogued cards, checked titles.....	1,500	1,775	1,405
U. S. checklist.....	200	383	362
Stanford collection.....	600	200	275
Other cards.....	200	300	528
Totals	4,000	3,598	3,209

SERIAL DEPARTMENT

Miss Green

The efficiency of the Serial Department for the year 1918-19 has necessarily suffered from the changes in its working force. The loss of Miss Brooks, for some years chief of the department, who died in January 1919, was keenly felt, both personally by her friends in the library, and economically by those who were left to resume her work.

The summer of 1919 has brought to the Serial Department, in common with the rest of the library, the interesting task of adjustment attendant upon removal to the new building. As a consequence of this partial reorganization, the department hopes to run on a basis of increased usefulness to the public and convenience to its staff. Among the contributing circumstances must be reckoned the improved facilities for filing, the pleasanter and more completely equipped room, and the greatly expanded list of current magazines accessible to readers. The grouping of these journals according to subject will doubtless aid in their use.

The daily work of the Serial Department has been performed as consistently as possible with its accustomed scheme. The bulletins of selected articles from current periodicals have been discontinued, but the subject index of late magazines, kept to meet the reference demands of students, is a great satisfaction.

The German periodical receipts have commenced to show considerable increase, and a few general magazines appear with those of a purely scientific nature which were first granted privileges of exportation. The total periodical receipts for the period of September 1, 1918, to August 31, 1919, amount to 20,033 and the newspaper receipts to 6,649. There has been prepared and forwarded to the bindery an aggregate of 1,563 volumes.

LOAN DESK

Mr. Park, Assistant Librarian

In the course of the year this department did one unusual and interesting piece of work. For some years past the crowded condition of the stacks has forced us to shelve thousands of books out of their regular order, to put them in remote corners of the building wherever space could be found. We planned to arrange all books in the order of their classification in the new building. It was thought best to plot the arrangement in advance so that each truck-load of books might find

place in its proper niche, like stones in a building, when we moved. This involved making a careful survey of all books that were to be moved into the new building; some of those taken into account being at the time shelved in departmental libraries. It was necessary to estimate the space occupied by each division of the classification. In many cases we had to take into account the space needed for individual sets which were shelved out of order. When this minute survey had been completed, the arrangement to be followed in the new building was plotted shelf by shelf on range diagrams which had been printed for that purpose. This work occupied no small part of the time of the Assistant Librarian during the year.

The circulation of books over the Loan Desk is indicated by the following statistics:

September	758
October	10,389
November	9,790
December	8,106
January	14,490
February	14,153
March	9,584
April	14,226
May	14,004
June	7,580
July	7,566
August	7,882
Total	118,528

LANE MEDICAL LIBRARY

Miss Ophüls, Medical Librarian

In 1918-19 the Lane Library received generous gifts from many sources. The most valuable ones were the books donated by Dr. P. S. Bruguere and Mrs. Rivas. The San Francisco County Medical Society again donated all its duplicate current journals and reprints to the library. We exchanged with the University of California Medical School, the St. Louis Medical Society and the Medical Library Association.

Cataloguing—	
New books catalogued.....	492
Old books catalogued.....	825
Total	1,317
Shelf list cards filed.....	1,228
Catalogue cards filed.....	6,443

Current accessions, both by purchase and by gift, have been catalogued to date; this includes considerable analyzing, for collected works, and for United States government publications of timely interest, not yet accessible through the regular indexes.

Progress in cataloguing the old books has been less than we had hoped and planned; loss of service to the library through illness, and

changes and vacancies in the staff, have made it necessary for such cataloguing as could be postponed to yield to the more immediate requirements of our library users.

Notwithstanding these interruptions, the sections on Orthopedia and Otolaryngology have been completely catalogued, and a substantial beginning made in the Genito-Urinary section. Records are now complete for classes A-M (General Science-Surgery); Q-R (the Barkan collection on Ophthalmology and Otolaryngology); and for about one-fourth of N (Genito-Urinary section).

Shelf-listing the periodicals has progressed through C for the American publications.

LIBRARY STAFF

The library suffered a serious loss in the death of Lucia May Brooks, on January 7, 1919. Miss Brooks had been a member of the staff since 1910, when she came hither from the University of Minnesota library. Her wide knowledge and experience together with her genial manner earned for her a high place in the esteem of all those with whom she was brought in contact.

In anticipation of the establishment in the new library of a documents division under her supervision Miss Minna Stillman made a three months' tour of eastern libraries, leaving here in March. She visited all of the more important collections of public documents and made a close study of methods and practices therein prevailing and gathered a mass of information that will prove of undoubted value to us.

The library staff comprised George Thomas Clark, librarian; Charles V. Park, assistant librarian and in charge of the loan desk; Helen Binner Sutliff, head of catalogue division; Alice Newman Hays, reference librarian; Elizabeth Hadden, head of order division; Lucia May Brooks, head of serial division (until January); Louise Ophüls, medical librarian; Wendell Earle Redwine, law librarian; Mary C. Day (until December), Ruth Cary Crutcher (January to August), librarian's secretary; Nina Almond, cataloguer; Edna L. Goss, cataloguer; Minna Stillman, cataloguer; Florence M. Craig, cataloguer; Hildegard Flügel, cataloguer; Lois May Woods, cataloguer; Louise W. Katz, cataloguer, Lane Library; Florence L. Wickes, cataloguer, Lane Library; Mildred Smith, assistant in order division; Grace Elizabeth Stillson, typist; Helen Avery Gale, reference assistant; Gladys Green, assistant in serial division; Eva West, assistant, Lane Library; Edith G. Meers, assistant in serial division (from June); Sterling J. Talbot, assistant at loan desk; Hannah Lilian Todd, bindery assistant.

GEORGE THOMAS CLARK,
Librarian.

DEAN OF MEN

During the autumn quarter 1917-18 the Student Adviser, Mr. Wayne Leslie Miller, withdrew from the University to enter aviation service. No successor was appointed to fill the vacancy during Mr. Miller's absence and at the beginning of the current academic year the office was abolished and the new position of Dean of Men was established.

The opening of the University in October found 750 of the total registration of men enlisted in the Students' Army Training Corps and therefore under military control. All fraternities, eating clubs, and organizations and practically all ordinary student activities were suspended for the period of the war. Naturally the ordinary routine duties of the Dean of Men were eliminated but greater and more responsibilities soon demanded attention.

In order to accommodate the 79 civilian students arrangements were made with the Chi Psi, the Delta Upsilon, the Alpha Sigma Phi and the Phi Delta Theta fraternities to use their chapter houses for cottage dormitories, and the Dean of Men was made responsible for the supervision and control of these houses. A student proctor was assigned to each house and in general the plan was successful.

During the influenza epidemic which started early in October and continued during the greater part of the fall quarter the Dean of Men devoted practically the entire time to visiting the hospitals, attending the needs of the invalid students, corresponding with relatives and friends of students who were critically ill, and meeting and caring for the parents of the ten men students who died during that period.

During the entire year the Dean of Men has made frequent visits to the hospitals in an effort to be of service to students who were ill.

In January, with the close of the Students' Army Training Corps, the number of students seeking employment was much larger than usual, even though the registration was considerably smaller than before the war. Unfortunately there was less demand for labor due to the fact that fewer eating places were open. Roble Hall was employing women to serve meals, and there was a general tendency in the community to economize.

In coöperation with the officers of the Young Men's Christian Association and the Appointment Secretary, the Dean of Men endeavored to secure work for all of the needy and worthy students, and in many cases new positions were created. Through arrangements with the business management of the University, student janitors were employed in Encina and Sequoia Halls, but unfortunately the experiment has not proved entirely satisfactory and will be discontinued.

In January and April, 263 former students returned to the University, 227 of them having been enlisted in service.

A general spirit of unrest and discontent became apparent in the student body soon after the close of the Students' Army Training Corps. Early efforts to overcome this condition were futile and the situation grew noticeably worse until near the close of the year. Severe criticism

and fault-finding, regarding the faculty in particular and everything in general, was most popular, but the greatest sport centered in an attack on the Freshman class, that started in a spirit of fun but finally came to a climax with a strong, intense feeling of bitterness.

Several explanations can be offered for this unusual condition: First, the general spirit of unrest that existed throughout the country; second, the disturbed conditions locally, due to the Students' Army Training Corps; third, lack of upperclassmen.

Toward the close of the year the situation greatly improved, strong leaders developed among the upperclassmen returned from service, a better spirit prevailed, destructive criticism disappeared, and a deeper sense of student responsibility for the conduct of the men of the University became apparent.

During this important period the Dean of Men spent considerable time in association and consultation with the students in their various lines of student activities, endeavoring at all times to emphasize the importance of student responsibility in matters pertaining not only to the individual but to all affairs of student life.

During the entire year there was considerable agitation, particularly in the college publications, for a return of student government, and the main purpose of emphasizing the importance of developing a sense of student responsibility was to bring the upperclassmen to realize that their first and most important duty, if they expected to establish student government, was to capitalize the spirit and loyalty of undergraduate life, making themselves responsible for the growth and development of the underclassmen, molding their energy and enthusiasm into a college spirit of real undergraduate service that would form a strong foundation for upperclass responsibility which would in later years mean not only a genuine and sincere spirit of service to the University, but would also develop within the Student Body a greater seriousness of purpose and a better understanding of the larger and more important problems of the University.

The Dean of Men has served as a member of the Public Health Committee, also as secretary of the Graduate Study Committee and the Scholarship Committee, and during the fall quarter he served as a member of the Committee on Registration.

JOHN EZRA McDOWELL,
Dean of Men.

DEAN OF WOMEN

In addition to the work of the office, the Dean of Women has continued an Instructor in the English Department, where she has had three hours' teaching a week in English A.

The Dean of Women continued a member of the Faculty Committee on Student Affairs until its reorganization in June 1919. She has served

as usual on the Public Health Committee, the Board of Directors of the Students' Guild and the Board of Directors of the Stanford Women's Club House, and has served from the time of appointment on the Faculty Committee on Vocational Guidance.

In her own office, the Dean of Women has been especially concerned with the following:

Residence Halls: Roble Hall has been filled to capacity (211 students) since its opening in October 1918, and Alvarado Hall, run by Mrs. A. Hurd, has housed those who applied too late to be accommodated in Roble.

The arrangement and equipment of Roble Hall are proving for the most part satisfactory and receive favorable comment from visitors who have studied the problems of housing in other colleges. Certain minor defects are being noted with a view to correcting them in the plans for the second hall. The dining rooms and main reception rooms are now somewhat crowded, because of the temporary connection of the additional wing with this first building. In view of this and of the use of Alvarado Hall during the year 1918-19 and of the marked increase in applicants for Roble Hall for the year 1919-20, the Dean of Women recommends that the University proceed to complete at the earliest possible moment the second residence hall for women students. Thus progress will be made toward the ultimate elimination of the problems arising from houses run by the sorority chapters which have inevitably resolved the sororities into a distinct social caste, destructive of that equality of opportunity upon which the founders built the University.

The Sorority House: The success of Roble Hall indicates that the University can reasonably assume the duty of housing eventually all its women students except those living with parents or legal guardians. It would seem well, therefore, for this to be an announced university policy. In line with this are the following resolutions of the Board of Trustees, (1) expressing willingness to purchase any fraternity houses offered for sale; (2) favoring the dormitory plan of housing students.

During the year 1918-19, the Dean of Women, as opportunity occurred in discussion of student problems, has stated to individual students that the University hopes ultimately to house all its women students in University residence halls. She has intended thereby to point out the probable future of sorority houses at Stanford far enough in advance of the completion of the second residence hall that the sorority chapters may be preparing themselves for further extension of the dormitory facilities of the University. Thus, if there is any principle behind opposition to the assumption by the University of its housing obligation, it may be placed squarely alongside the principle upon which the University proposes acting in assuming this obligation and the two may be weighed together.

The decision to make a beginning toward preparing student opinion for the gradual elimination of the sorority house was hastened by certain defects of the sorority house system that became apparent during

the year 1918-19: (1) The attitude of the sorority pledges and initiates living in Roble Hall under the residence regulation indicated a sense of superiority to be one of the results of their having been asked to join a sorority. Since these students otherwise showed often more than average refinement, the responsibility for this condition in Roble Hall rested obviously with the system. (2) The tone of social ideals (using "social" in its narrow sense) expressed in various campus functions, such as the Athletic Carnival in April 1919, showed a failure of the sororities to realize their responsibilities in the community. The tone of the "concessions" of the sororities at this Carnival was not representative of the best at Stanford and reflected no credit on Stanford girls. Yet sororities, by virtue of their very existence, must be expected to set the social pace, since their members are the leaders of campus social life and are often the girls of greatest power among the women students.

Previous to the observation of these conditions, other difficulties inherent in the sorority house had presented themselves. (1) Each house is practically closed to non-sorority girls or members of other sororities, except on special invitation. It is rare that outsiders feel free to ring the door bell and run in to see their friends, as is the custom in the Halls, and it too often happens that the girls in one house have no more than a bowing acquaintance with those of another, although the proximity of the houses and the relatively small number living in each should encourage friendliness and comradeship.

Close observation, for three years, of such conditions as those stated above has convinced the Dean of Women that she is a witness to the "growth of exclusive and undemocratic castes within the University," which, the founding grant states, "it is the duty of the University authorities to prohibit." Moreover, in contemplating further developments at the University in the interests of the women students, the Dean of Women is faced by the fact that if there is to be real progress toward wholesome college life among the women students, student life can not continue to find its basis in or to exist in spite of divisions and consequent inequality of opportunity among the women students.

It may be that when the sorority house was allowed to establish itself as a part of the university community, the simplicity of social life and the pioneer spirit of pulling together in spite of differences may have minimized the inherent difficulties of the system. But the development of a more and more artificial social life, within and without the University gates, and the apparent prosperity of student organizations at the University have contributed to emphasize group rivalries and to put at a premium the "social" advantage of "making a house."

Summer Quarter: The second year of experience with the summer quarter bears out the statement in last year's report that there is among the women students little student life needing direction. The University's standard of conduct can be emphasized among those living in Roble Hall, any apparent failure to understand it is readily discerned and the necessary admonition given by the Matron and the Dean of Women.

As regards housing, certain changes from the present plan seem advisable. So far, several sorority houses have remained open in the summer, with some older person, usually not the house mother, in charge. These houses have only six or seven students living in them; there is felt to be no student government responsibility in the summer; the sorority chapter itself has no summer organization, the sorority house is therefore transformed into a rooming house (the kitchens are not run in summer), without a head responsible to the University. After observing these conditions for two years, the Dean of Women recommends that for the summer quarter 1919-20 the plan be tried of approving only Roble Hall as a campus residence for summer quarter undergraduates. Graduate students would still have the privilege, in special cases, of living in Madrono Hall or in other places specially approved, but undergraduates would be assured of living according to the usual university standards.

This office might perform a useful function in the summer quarter by planning a few simple social events for the women students. But it does not seem desirable for the Dean of Women to be on duty for the four quarters. She recommends that next summer the plan be tried of appointing a social director for the summer quarter whose duty might be chiefly to entertain informally at intervals during the quarter. Such an official might also hold office hours certain days in the week to give general information of the sort that new students need and should have available.

Quite aside from the summer quarter, a considerable amount of new summer work has developed for the Dean of Women. This is chiefly correspondence in regard to Roble Hall and the clerical work involved in receiving deposits on rooms, sending and receiving application blanks, assigning rooms, etc. This produces a heavier correspondence per week during the summer than at any other time in the year, is continuous, and must be kept moving to secure the adequate administration of the Hall.

Women's Self-Government: The Organized Women have conducted their government as usual through the Women's Student Council and Conference. The year has been uneventful. There has been little or no increase in the strength of public opinion, so necessary to any good democratic government, but neither has there been a failure to maintain the responsibilities of government already developed. Only when the women students are free to unite their interests and work for a better community life, will they develop the necessary public opinion and *esprit de corps*, of which stable government will be the natural outgrowth.

Athletics: Interest in athletics has suffered gradual decrease among the women students, owing to the frequent changes in the gymnasium personnel and the distance of athletic fields from the center of athletic activity, the swimming pool. The construction of permanent, well-equipped fields around the gymnasium is the imperative need for the year 1919-20. Wholesome athletic activity is a splendid leveler for

social discriminations, as long as these exist, and is the nucleus of future community life among Stanford women students.

Vocational Information: During the autumn and winter quarters each new woman student had a ten-minute interview with the Dean of Women, the main purpose of which was to discover whether the students had definite work in mind for which they expected their university work to prepare them. It was evident from these interviews, (1) that fewer than half wished to teach, and of those, some did not know what they most wanted to teach; (2) that the kinds of work they expected to enter were almost as many as there were students; (3) that those looking toward the professions of law, medicine and engineering were a small minority, and (4) that fully one-fourth had not decided upon any work but were hoping from a "general course" to be able to decide later. It became clear therefore, that the so-called "liberal studies" scattered over a wide field are those that most interest Stanford women students for at least their first two years.

The Second Vocational Conference on Opportunities other than Teaching open to Women was held at the Stanford Women's Club House on May 24, 1919. The subjects presented were as follows: Qualifications for Professional Work; Landscape Architecture; Women in Industry; Department Store Education; Women in Journalism; Bacteriological Laboratory Work; Medicine and Nursing; Women in Chemistry; and Clinical Social Service.

The Vocations Committee of the Stanford Y. W. C. A. was of great assistance in advertising the conference and in entertaining the speakers, and the Chairman of the Committee has asked that next year's conference be entirely arranged by the students.

Student Employment: A Student Employment Bureau is still a part of this office, but its function has become that of giving general information about opportunities for securing employment: (1) those desiring clerical work, typing or stenography are referred to the Appointment Secretary; (2) those desiring work for board are referred to the Matron of Roble Hall, who now employs girls to serve in the dining-rooms and finds them equally as satisfactory as the men for this work; (3) a few who need both room and board in order to come to the University are placed in private families; (4) those who wish to earn a small amount by taking care of children or by light housework sometimes find work through this office. Employers, however, are learning the difficulty of securing skilled student helpers, and applications for them decrease. As long as sufficient opportunity is provided in Roble Hall for girls who need work, this is not to be regretted, since girls working in private families have the minimum of college life and friendships.

Public Health: The epidemic of influenza, which came one week after the opening of the University in October 1918, made immediate demands upon this office, on account of the absence of the Medical Adviser of Women, for the equipment and administration of an isola-

tion hospital for influenza cases. An empty fraternity house was rented and operated as a hospital for women students. In spite of the difficulties of securing adequate nursing assistance, forty-seven cases were successfully cared for in this hospital, besides a like number at the regular Guild hospitals. There were two fatalities.

Women's Student Loan Fund: During the year 1918-19, three students received loans to enable them to continue their university work. One former student repaid in full a loan outstanding since 1915. One former student completed repayment, and three made partial payments. From one undergraduate the fund received a small contribution, the result of her first remunerative employment. Except for this, there have been no additions to the capital.

The fund has continued with about the same proportion as usual between bank balance and outstanding loans. Small money gifts to the University might be effectively placed in this fund, which is often the means of tiding girls over periods of financial stress that otherwise would compel them to leave the University. Following is the financial statement to date:

Balance forward, September 15, 1918.....	\$166.76	
Outstanding loans, September 15, 1918.....		\$1,237.00
Contribution per student	10.00	
Loans repaid, 1918-19.....	242.92	
		<hr/>
Total in fund, 1918-19.....	\$419.68	
Loans, 1918-19		200.00
		<hr/>
Balance forward		\$219.68
		<hr/>
Total loans, to September 1, 1919.....	\$1,437.00	

Scholarships: There are at present only three scholarships open to women students and of these two have certain restrictions that considerably limit the number of eligible applicants. There should be added at least seven undergraduate scholarships for financially handicapped women students with good scholarship.

High scholarship standards could be made of greater importance to students by several undergraduate scholarships or prizes open to men and women alike, to be granted solely on grounds of academic excellence; and perhaps a traveling fellowship awarded to that member of the graduating class who ranks first in scholarship and gives greatest promise of ability.

Resident graduate scholarships and fellowships, especially in the non-technical departments, would contribute toward encouraging graduates from other colleges and universities to study at Stanford, while traveling graduate scholarships and fellowships would enable Stanford graduates to broaden their experience by graduate study elsewhere.

HARRIET BRADFORD,
Dean of Women.

APPOINTMENT SECRETARY

During the year 1918-19 the volume of business handled by the Appointment Office has been much greater than that of any previous year. For this reason it has been necessary to increase the permanent clerical force as well as to employ more temporary assistants. As usual there have been four main divisions to the work:

1. The recommendation of candidates for teaching positions.
2. The recommendation of candidates for non-teaching positions.
3. The recommendation of candidates for temporary and part-time positions.
4. Vocational conferences with undergraduates.

TEACHING POSITIONS

The increasing shortage of teachers which has been so apparent in this office for several seasons has this year become acute. It has been impossible to supply the demand. Moreover, the indications are that the shortage will be found more serious next year. The principal reasons for the shortage seem to be as follows:

(a) Recent graduates believe that they can find better financial opportunities in other professions. They will accept much smaller beginning salaries in these other professions because they feel that ten years hence they will have advanced further.

(b) Tenure of office, especially in administrative positions, insecure.

(c) Insufficient provision for suitable housing and boarding facilities for teachers.

(d) Interference with the private life of teachers; for instance, church attendance and disposal of leisure time.

This shortage of teachers has been particularly serious, of course, in the newer subjects, but has been by no means confined to these subjects. Practically none of the recent graduates in science and mathematics, either men or women, are entering the teaching profession. Even a large number of those prepared to teach purely academic subjects are being attracted to other professions. As a result the Appointment Office, during the past year, has been forced to report to school officials that no candidate could be recommended for one hundred and fifty-four teaching positions, many of them exceptionally desirable. A classified list of the calls for which the office had no candidates follows:

Academic subjects (about 20 include Spanish).....	28
Agriculture	2
College positions (mostly science).....	6
Commercial	10
Domestic science.....	8
Grade work.....	17
Manual training	16
Music	8
Music and physical education.....	3
Physical education	21
Playground directors (four in Philippines).....	5
Principals (elementary schools).....	4
Principal (high school—able to teach manual training and athletics)	1
Science and mathematics (men preferred).....	25

A statistical record of the year's work in supplying teachers follows:

Requests for teachers—

September	40
October	17
November	20
December	113
January	19
February	14
March	51
April	123
May	170
June	154
July	191
August	114

This makes a total of 926 requests for teachers as compared with 692 received last year.

Registrants for teaching positions:

(a) New registrants—

Men	27
Women	80

(b) Re-registrants—

Men	82
Women	223

NON-TEACHING POSITIONS

The rapid growth of this division of the work has proved that the Appointment Office can render valuable assistance to graduates seeking technical or professional positions or business opportunities. That the work is appreciated by employers is evidenced by the fact that an ever increasing number of employers are requesting that their names be kept on the mailing list of the Appointment Office so that they will be notified when young men and women interested in their business or profession are available for positions. In these types of positions there is naturally very close coöperation between the Appointment Office and the heads of the various technical departments concerned.

Statistical records follow:

Registrants for non-teaching positions:

(a) New registrants—

Men	72
Women	62

(b) Re-registrants—

Men	12
Women	38

Total for the year 1918-19 is 184; total for the year 1917-18 was 57.

PART-TIME AND TEMPORARY EMPLOYMENT

The assistance which the Appointment Office has rendered skilled students such as tutors, stenographers, bookkeepers, and salesmen, in ob-

taining part-time employment while at the university has done much to acquaint students with the other and more important phases of the work of the office. During the year approximately 172 students, half of them men and half of them women, have registered for part-time or temporary employment. The kinds of positions desired can be roughly classified as follows:

	Men	Women
Tutors	14	28
Office workers.....	9	28
Miscellaneous	63	31

Many of the requests received by the office for temporary employees asked for as large a number as could be supplied. This has made it impossible to give an accurate account of the number of opportunities given the office for so placing Stanford students. Rather than guess at figures the office has adopted the method of considering indefinite requests of this nature as requests for only one candidate. Using this method the total number of requests received during the year has been one hundred and twenty (120).

VOCATIONAL CONFERENCES

Individual vocational conferences have been held with many undergraduate students and some graduates who have needed accurate information regarding opportunities for employment and the preparation and qualifications necessary for success. These conferences are proving to be an important part of the Appointment Secretary's work.

During the year certain daily records have been kept by the office. These records have resulted in the following interesting totals:

	This Year	Increase over last year's totals
Letters written.....	5,138	1,919
Sets of recommendations sent out.....	2,286	431
Circulars and recommendation blanks mailed.....	3,196	(Fewer because of different method pursued)
Number of visitors received.....	3,091	616

ELIZABETH B. SNELL,
Appointment Secretary.

UNIVERSITY CHAPLAIN

CHURCH PREFERENCES OF STUDENTS

The following tables exhibit the church preferences of students entering the University in the autumn, winter, and spring quarters.

AUTUMN QUARTER

Preferences	Men	Women
Baptist	23	77
Catholic	58	17
Congregational	33	18
Christian	36	33
Christian Science	35	10
Episcopal	55	36
Friends	2	2
Jewish	13	4
Lutheran	7	3
Methodist	100	30
Presbyterian	76	36
Protestant	9	.....
Unitarian	2	2
Universalist .....	.....	2
Miscellaneous	10	2
Total preferences	459	272
No preference	109	21
Totals	568	293

Men—

Per cent with preference..... 80.9

Per cent without preference..... 19.1

Women—

Per cent with preference..... 92.8

Per cent without preference..... 7.2

WINTER QUARTER

Preferences	Men	Women
Baptist	4	2
Catholic	4	3
Congregational	2	8
Christian	2	2
Christian Science	3	4
Episcopal	3	5
Methodist	12	5
Presbyterian	10	5
Unitarian .....	.....	1
Universalist .....	.....	1
Total preferences.....	40	36
No preference.....	13	3
Totals	53	39

Men—

Per cent with preference..... 75.50

Per cent without preference..... 24.50

Women—

Per cent with preference..... 92.31

Per cent without preference..... 7.69

SPRING QUARTER

Preferences	Men	Women
Catholic	6	1
Congregational	2	.....
Christian	1	.....
Christian Science	2	.....
Episcopal	7	5
Lutheran	2	.....
Methodist	6	.....
Mormon	1	.....
Presbyterian	6	4
Quaker .....	.....	1
Unitarian	1	1
Total preferences.....	34	12
No preference.....	17	3
Totals	51	15

The summary of these records shows that of 1019 students entering the University in 1918-19, 853 were members of churches or had some preference.

CHURCH SERVICES

Services were arranged as follows:

- (1) Daily:—Morning Chapel at 7:45 a.m., with address.
- (2) Sunday:—Morning service with sermon by Chaplain or visiting preacher.
- (3) On stated Sundays a celebration of Holy Communion.

SPECIAL PREACHERS

The following named clergymen were invited to preach in the Memorial Church during the past academic year:

Autumn Quarter: Rev. William Stidger, San Jose, Methodist; Rev. C. S. S. Dutton, San Francisco. Unitarian; Rev. Frank M. Silsley, Oakland, Presbyterian; Rev. M. G. Papazian, Fresno, Armenian; Rev. Merle Smith, Pasadena, Methodist; Bishop Nichols, San Francisco, Episcopalian.

Winter Quarter: Rev. Ambrose W. Vernon, Brookline, Mass., Unitarian; Rev. O. P. Gifford, Los Angeles, Baptist; Rev. Frank Dyer, Tacoma, Congregationalist; Rev. E. L. Parsons, Berkeley, Episcopalian; Rev. Josiah Sibley, San Francisco, Presbyterian; Rev. W. B. Hinson, Portland, Oregon, Baptist; Bishop Page, Spokane, Washington, Episcopalian.

Spring Quarter: Rev. F. W. Clampett, Trinity Church, San Francisco, Episcopalian; Rev. Leslie Learned, Pasadena, Episcopalian; Rev. C. P. Deems, Chaplain Seaman's Institute, San Francisco, Non-sectarian; President W. T. Foster, Reed College, Portland, Unitarian; Rev. G. A. Johnston Ross, New York, Presbyterian; Bishop Matt. S. Hughes, Baccalaureate preacher, Portland, Oregon, Methodist.

Summer Quarter: President S. B. L. Penrose, D.D., Whitman College, Walla Walla, Washington, Presbyterian; Rev. C. S. S. Dutton, San Francisco, Unitarian; Rev. J. W. Gresham, D. D., Dean of Grace Cathedral, San Francisco, Episcopalian.

A special memorial service was arranged to do honor to the memory of the Stanford students who died during the war, Dean David P. Barrows of the University of California, being the speaker.

TEACHING

The Chaplain gave a course of lectures in the University on the Life and Ethics of Jesus.

In addition he has given addresses to various schools, including the graduation address at the High School, Watsonville, the Training School for Nurses at the University Hospital, and Miss Harker's School, Palo Alto.

SOCIAL SERVICE

Acting as treasurer for the Campus Auxiliary to the Stanford Clinics, I have received during the year \$427.40 for the benefit of the Stanford Clinics.

Acting as treasurer of a committee having for its object the creation and maintenance of a Convalescent Home for the children of the Stanford Clinics, it is my pleasure to report that the sum of \$3,240.25 has been collected. The Home has been established on the campus since May, with an average of nine children in residence, and there is fair hope that it may become a permanent objective for social service in the University.

MUSIC

The Church has lost a devoted servant in the death of Mr. Louis H. Eaton, its organist. Mr. Warren D. Allen promises to be a worthy successor. During the past year organ recitals have been given on Sundays and Wednesdays, at 4 p.m. We record two great musical events: First, an organ recital by Mr. Joseph Bonnet, the distinguished French organist; and second, a splendid performance of Haydn's Oratorio, "Creation," by the choir of the church, assisted by friends, and accompanied by an orchestra drawn from the San Francisco Symphony Orchestra.

DAVID CHARLES GARDNER,
Chaplain.

CURATOR OF THE MUSEUM

The year's work at the Leland Stanford Junior Museum has been composed of the care and attendance connected with the various collections of the institution, the gradual improvement, as regards labeling and display of exhibits, and the arrangement and display of exhibits in the Art Gallery.

Material accumulated in the store-rooms and excess material in a number of rooms have been assembled toward special exhibit displays in one or two of the rooms now partly occupied.

This work has been concentrated upon two rooms, namely, a Textile Room and Pioneer Room. It is the plan to assemble all interesting textiles and objects of weaving together with the Stanford collection of laces and display them on the upper floor of the western rotunda.

The Pioneer Room is to contain all objects of museum quality pertaining to the early history of California and Stanford University. This material will be displayed in cases and frames in the room now containing the Stanford locomotive. In this room it is proposed also to exhibit in a permanent form the collection of photographs exhibited in the Thomas Welton Stanford Art Gallery during Founders' Week and which created so much interest.

The Egyptian Room has been installed, opened and completed. With the addition of a few more labels to objects, on which investigation is proceeding for correct titles, the Egyptian Room will be the best displayed room of Egyptology in the West.

During the year a complete revision of the art galleries on the upper floors has been arranged. This involved the retinting of the walls, repairing of frames and varnishing of pictures as needed.

Several accessions have been made during the year. A number of objects have been received from the business office and loan exhibitions include material from J. E. Hewston, and a large collection of Oriental objects from W. H. Shockley of Palo Alto.

The attendance for the year is reported as follows:

For the year commencing September 1, 1918, and ending September 1, 1919, 6,045 visitors have entered for which the sum of \$1511.25 has been received and paid to the Business Office. Beside this there has been an increase in the attendance of students and faculty members.

On January 1919, in harmony with a request from the President's Office, Monday was established as a free day. This free day was met with instant response in interest by the community and coöperation with the plan, by orderly attendance. The expense and extra attention has been but slightly increased through the establishment of Monday as a free day.

The attendance on Mondays for the eight months since January, 1919, has been 1468 visitors. The total attendance of visitors not including students and faculty has been 7513 or 1299 more visitors than the previous year.

THOMAS WELTON STANFORD ART GALLERY

The Thomas Welton Stanford Art Gallery has been open every day of each week during the year to the public. During the year the interest of the visiting public has been increased and enriched by exhibitions of arts and handicrafts which have been exhibited in the rear galleries from time to time.

The following collections were included in the year's exhibitions:

Joseph Pennell Food and Fuel Administration Lithographs; Exhibition of Ikeda and Oriental Material; Foreign War Posters from France; War Sketches by "Feg" Murray; War Pictures collected by Dr. Clelia D. Mosher; Jonas Lithographs, "The Soul of France"; Historical and Artistic Pictures pertaining to Stanford University; Design and Color Exhibition of Eastern Art Schools; Etchings by European Etchers; Collection of Paintings by Ralph Davison Miller; Collection of Flower Paintings, by Miss Rowan of Australia; Food Administration Paintings.

The last collection named was received through the efforts of President Wilbur and it is expected that the pictures will be an accession to the University collections.

PEDRO J. LEMOS,
Curator.

APPENDIX V.

PUBLICATIONS OF THE FACULTY

DAVID STARR JORDAN, Chancellor Emeritus:

- Absolutism was: *Public*, vol. 22, April 26, 1919.
Along the Mexican border. Interview: *Seattle Union Record*, June, 1919.
L'Alsace-Lorraine pendant la guerre: *Rhin et Moselle*. St. Lambert, France. August 20 and September 5 and 30, 1918.
The armed peace: *Public*, vol. 22, August 21, 1919.
The Balkan tangle: *Advocate of Peace*, vol. 80, October, 1918.
The Balkan tragedy: *Journal of Race Development*, vol. 9, October, 1918.
A basis for world democracy: Monroe, P., & Miller, I. E., ed. *The American Spirit*, World Book Co., N. Y., 1918.
Builders of Democracy: *San Francisco Bulletin*, Teacher's edition, June 21, 1919.
Building for the future: *Public*, vol. 22, May 3, 1919.
The call of the Red Cross: *Western Journal of Education*, vol. 24, November, 1918.
Cause of war laid at the door of militarism. Interview: *Seattle Union Record*, June 2, 1919.
Changes in names of American fishes: *Copeia*, no. 49, October 4, 1918.
Co-operation and the League of Nations: *Pacific Co-operator*, vol. 16, April, 1919.
Democracy and world relations. World Book Co., Yonkers-on-Hudson, 1918.
The difficulties of prophecy: *Public*, vol. 22, April 19, 1919.
Do capitalists start wars? Interview: *Seattle Union Record*, June 2, 1919.
Early days of Stanford: *Daily Palo Alto Times*, Memorial Number, Stanford edition, 1919.
Eugene Debs: *Unity*, vol. 83, August 14, 1919.
The fate of Alsace-Lorraine: *Star*, vol. 67, February, 1919.
The food blockade: *Survey*, vol. 42, June 28, 1919.
For the covenant: *Transactions of the Commonwealth Club of California*, vol. 14, May, 1919.

- Fresh water lampreys of the eastern United States: *Copeia*, no. 64, December 31, 1918.
- The genera of fishes—Part II. From Agassiz to Bleeker, 1833-1858, . . . : Leland Stanford Junior University Publications, *University Series*, 1919.
- The impending collapse of the Central powers: *Public*, vol. 21, September 7, 1918.
- Irredenta—Unredeemed: *Star*, vol. 35, March, 1919.
- Is Japan a dynastic state?: *Public*, vol. 22, March 1, 1919.
- The League of Nations (Report of address): *San Francisco Bulletin*, March 12, 1919.
- The League of Nations: *Star*, vol. 35, May, 1919.
- League of Nations. James H. Barry Co., San Francisco, 1919.
- Monarchs by divine right (note introducing article by Karl Ewald): *Star*, vol. 67, April, 1919.
- A matter of history: *San Jose News*, July 31, 1919.
- Making peace interesting: *Unity*, vol. 83, May 29, 1919.
- The name of the California poppy: *Western Journal of Education*, vol. 25, May, 1919; *Guide to Nature*, vol. 12, July, 1919.
- New era dawns for Mexico and Mexicans: *Pan-Pacific*, vol. 3, May, 1919.
- A new genera of fishes: *Proceedings of the Academy of Natural Sciences, Philadelphia*, vol. 71, April 16, 1919.
- Note on Gistel's Genera of Fishes: *ibid*, vol. 71, April 10, 1919.
- On certain genera of Atherine fishes: *Proceedings of the U. S. National Museum*, vol. 55, 1919.
- On a rare species of half-beak *Hemiramphus balao* from Cuba: *ibid*, vol. 55, 1919.
- Primal motives of war: *Public*, vol. 22, March 15, 1919.
- The problem of Germany: *Star*, vol. 67, April, 1919.
- Problems of the peace table (foreword): *Sunset*, vol. 42, January, 1919.
- II. The economic situation: *ibid*, vol. 42, February, 1919.
- III. The heritage of debt: *ibid*, vol. 42, March, 1919.
- IV. The freedom of the seas: *ibid*, vol. 42, April, 1919.
- V. Self-determination for Ireland: *ibid*, vol. 42, May, 1919.
- VI. Japan and the society of nations: *ibid*, vol. 42, June, 1919.
- VII. The right of conquest and the League of Nations: *ibid*, vol. 43, July, 1919.
- VIII. The League of Nations and the treaty of peace: *ibid*, vol. 43, August, 1919.
- The red salmon, a fish with an instinct for lake water: *Natural History*, vol. 19, April-May, 1919.
- Roosevelt as I knew him: *San Francisco Bulletin*, January 9, 1919.

- Roosevelt and Tutuila: *New Republic*, vol. 18, February 8, 1919.
- St. Ambrose and the flower of fishes: *American Angler*, October, 1918.
- Schools and illiterates: *San Francisco Bulletin*, vol. 128, June 21, 1919.
- Stability of democracy: *Public*, vol. 21, December 21, 1918.
- Temperature and vertebrae in fishes; a suggested test: *Science*, n. s. vol. 49, April 4, 1919.
- The terms of peace. Interview: *Seattle Union Record*, June 2, 1919.
- Theodore Roosevelt, Nobel prize winner: *Survey*, vol. 41, January 18, 1919.
- Thomas Welton Stanford: *Stanford Illustrated Review*, vol. 20, October, 1918.
- The training of a father: *Christian Herald*, June 21, 1919.
- A victory message: *Stanford Quad*, vol. 26, 1919.
- War and genetic values: *Journal of Heredity*, vol. 10, May, 1919.
- War humanly impossible: *Public*, vol. 22, July 12, 1919.
- War without limit: *ibid*, vol. 22, July 19, 1919.
- Wars are legal and illegal: *ibid*, vol. 22, April 26, 1919.
- Welcome home to Stanford: *Stanford Illustrated Review*, vol. 20, April, 1919.
- The world's hope—A society of nations: *Public*, vol. 22, July 12, 1919.
- Xanthichthys Mento* from Southern California: *Copeia*, no. 65, January 22, 1919.

RAY LYMAN WILBUR, President:

- Commencement address: *Stanford Illustrated Review*, vol. 20, October, 1918.
- Dr. Wilbur on matriculation: *ibid*, vol. 20, November, 1918.
- Food conservation for world relief. Address at the Palace Hotel, San Francisco, November 22, 1918. U. S. Food Administration for California.
- Food in the war today: *American Federationist*, vol. 25, September, 1918.
- Russia, our neighbor: *Siberian Opportunities*, no. 1, May, 1919.
- Stanford fraternities: *Stanford Illustrated Review*, vol. 20, April, 1919.
- Stanford in the great war: *Daily Palo Alto Times*, Memorial Number, 1919.
- Stanford, 1918-19: *Stanford Quad*, vol. 26, 1919.
- Vivisection, the standpoint of the physician: *Transactions of the Commonwealth Club of California*, vol. 13, January, 1919.

ORRIN LESLIE ELLIOTT, Registrar:

- Why Stanford?: *Daily Palo Alto Times*, Memorial Number, Stanford Edition, 1919.

ANATOMY

ARTHUR WILLIAM MEYER:

Hydatiform degeneration with deductions from over one hundred new cases: *American Journal of Obstetrics and Diseases of Women and Children*, vol. 78, November, 1918.

Hydatiform degeneration in tubal pregnancy: *Surgery, Gynecology and Obstetrics*, vol. 28, March, 1919.

The occurrence of superfetation: *Journal of the American Medical Association*, vol. 72, March 15, 1919.

On the nature, occurrence and identity of the plasma cells of Hofbauer: *Journal of Morphology*, vol. 32, June, 1919.

Sidelights from early abnormal conceptuses: *Anatomical Record*, vol. 16, May 20, 1919.

Some aspects of ovarian pregnancy with report of a case (with H. M. N. Wynne): *Johns Hopkins Hospital Bulletin*, vol. 30, April, 1919.

A suggestion from Plato, with others: *Science*, n. s. vol. 49, June 6, 1919.

A survey of and studies upon pathological ova in the Carnegie embryological collection. Carnegie Institution, Washington, D. C., 1919.

Uterine, tubal and ovarian lysis and resorption of conceptuses: *Biological Bulletin*, vol. 36, April, 1919.

EDGAR DAVIDSON CONGDON:

Embryonic structure of avian heart muscle with some considerations regarding its earliest contraction: *Anatomical Record*, vol. 15, October 20, 1918.

APPLIED MATHEMATICS

SIDNEY DEAN TOWNLEY:

The total solar eclipse of June 8, 1918: *Astronomical Society of the Pacific*, vol. 30, October, 1918.

The Palo Alto Union High School: *Architect and Engineer of California*, vol. 56, February, 1919.

BACTERIOLOGY

WILFRED HAMILTON MANWARING:

The effect of heat on the spores of *B. botulinus* (with G. S. Burke): *Journal of the American Medical Association*, vol. 72, January, 1919.

Notes on two types of *B. botulinus* (with G. S. Burke): *Journal of Bacteriology*, vol. 4, July, 1919.

The occurrence of *B. botulinus* in nature (with G. S. Burke): *ibid*, vol. 4, July, 1919.

BOTANY

DOUGLAS HOUGHTON CAMPBELL:

The derivation of the flora of Hawaii: Leland Stanford Junior University Publications, *University Series*, 1919.

Studies in some East Indian Hepaticae: *Annals of Botany*, vol. 32, July, 1918.

GEORGE JAMES PEIRCE:

Fundamentals: *Nation*, vol. 108, May 10, 1919.

The influence of light upon the action of stomata and its relation to the transpiration of certain grains (with John Gray): *American Journal of Botany*, vol. 6, April, 1919.

Louis H. Eaton: *Stanford Illustrated Review*, vol. 20, December, 1918.

The Red Cross in Palo Alto: *Daily Palo Alto Times*, Memorial Number, Stanford Edition, 1919.

What kinds of botany does the world need now?: *Science*, n. s., vol. 49, January 24, 1919.

CHEMISTRY

JOHN MAXSON STILLMAN, Emeritus:

Paracelsus as a chemist and reformer of chemistry: *Monist*, vol. 29, January, 1919.

Paracelsus as a theological writer: *Open Court*, vol. 33, March, 1919.

Stanford war service memorial: *Stanford Quad*, vol. 26, 1919.

The war service memorial: *Stanford Illustrated Review*, vol. 20, February, 1919.

EDWARD CURTIS FRANKLIN:

Potassium ammonio-sodiate, potassium ammonio-lithiate, rubidium ammonio-sodiate and rubidium ammonio-lithiate: *Journal of Physical Chemistry*, vol. 23, January, 1919.

ERNEST OERTLY:

A new theory relating constitution and taste (with R. G. Myers): *Journal of the American Chemical Society*, vol. 41, June, 1919.

NORRIS RAKESTRAW:

A sojourn at Ft. Henry: *Stanford Illustrated Review*, vol. 20, January, 1919.

ECONOMICS

MURRAY SHIPLEY WILDMAN:

Prices of foods: *War Industries Board Price Bulletin*, no. 4, 1919.

Prices of vegetables and truck: *ibid*, no. 14, 1919.

EDUCATION

ELLWOOD PATTERSON CUBBERLEY:

Public education in the United States. Riverside Text-books in Education. Houghton Mifflin, Boston, 1919.

Editor of the Riverside Text-books in Education:

(1) Kendall, C. S., & Mirick: How to teach the special subjects. Houghton Mifflin, Boston, 1919.

(2) Monroe, W. S.: Measuring the results of teaching. Houghton Mifflin, Boston, 1918.

(3) Sears, J. B.: Class room organization and control. Houghton Mifflin, Boston, 1918.

(4) Terman, L. M.: The intelligence of school children. Houghton Mifflin, Boston, 1919.

LEWIS MADISON Terman:

An experiment in infant education (with anonymous author): *Journal of Applied Psychology*, vol. 2, September, 1918.

The intelligence of school children. Riverside Text-books in Education. Houghton and Mifflin Co., Boston. 1919.

Some data on the Binet test of naming words: *Journal of Educational Psychology*, vol. 10, January, 1919.

Tests of general intelligence: *Psychological Bulletin*, vol. 15, May, 1918.

The use of intelligence tests in the army: *Psychological Bulletin*, vol. 15, June, 1918.

PERCY ERWIN DAVIDSON:

Educational reform and the manly virtues: *School and Society*, vol. 8, September 28, 1918.

Some reasons for the state direction of civic-economic training, particularly in schools of secondary grade: *Sierra Educational News*, February, 1919.

JESSE BRUNDAGE SEARS:

Classroom organization and control. Riverside Text-book Series in Education. Houghton Mifflin Co., Boston. 1918.

WILLIAM MARTIN PROCTOR:

The use of intelligence tests in the educational guidance of high-school pupils: *School and Society*, vol. 8, October 8, October 26, 1918.

ELECTRICAL ENGINEERING

HARRIS JOSEPH RYAN:

The work of the electrical engineer: *Throop College Bulletin*, July, 1919.

ENGLISH

MELVILLE BEST ANDERSON, Emeritus:

Malcolm Playfair Anderson: *Condor*, vol. 21, May, 1919.

WILLIAM HERBERT CARRUTH:

Be not afraid (poem): *Public*, vol. 22, February 8, 1919.

The patriotic thing: *ibid*, vol. 21, August 10, 1918.

Y. M. C. A. exclusions: *New Republic*, vol. 17, January 25, 1919.

RAYMOND MACDONALD ALDEN:

Nippon-American: Idealism and idiom: *Atlantic Monthly*, vol. 123, June, 1919.

Recent poetry: *Nation*, vol. 108, April 19, June 7; vol. 109, July 26, 1919.

Titus Andronicus and Shakespeare dogmatics: *Modern Language Notes*, vol. 34, April, 1919.

Editor, *Essays, English and American*. Scott, Foresman & Co., Chicago. 1917.

JOHN S. P. TATLOCK:

The S. A. T. C. in the Southwest: *Stanford Illustrated Review*, vol. 20, January, 1919.

HENRY DAVID GRAY:

The dumb-show in Hamlet: *Modern Philology*, vol. 17, May, 1919.

Titus Andronicus once more: *Modern Language Notes*, vol. 34, April, 1919.

EDITH RONALD MIRRIELES:

"Salut" (Verse): *Sunset*, vol. 43, August, 1919.

Searching: *Stanford Illustrated Review*, vol. 20, February, 1919.

FRANK ERNEST HILL:

Enter aerial commerce: *New Republic*, vol. 18, February, 1919.

MARGERY BAILEY:

Seven peas in a pod. Little Brown & Co., Boston. 1919.

ENTOMOLOGY AND BIONOMICS

VERNON LYMAN KELLOGG:

The capture of Charleville: *Atlantic Monthly*, vol. 122, September, 1918.

German food and trade conditions (with A. E. Taylor): *Bulletin of the American Relief Administration*, No. 1, April 15, 1919.

Germany in the war and afterward. Macmillan Co., N. Y. 1919.

Paderewski, Pilsudski, and Poland: *World's Work*, vol. 38, May, 1919.

- Poland, the verge of bolshevism: *Atlantic Monthly*, vol. 124, July, 1919.
 Post-mortem of Central Europe: *Atlantic Monthly*, vol. 123, June, 1919.
 Sorely tried Poland: *Outlook*, vol. 122, May 28, 1919.
 Unclean, unclean: *North American Review*, vol. 208, October, 1918.

RENNIE WILBUR DOANE:

- Weevil in Australian wheat in California: *Journal of Economic Entomology*, vol. 12, August, 1919.

GORDON FLOYD FERRIS:

- The alleged occurrence of a seasonal dimorphism in the females of certain species of mealy bugs: *Entomological News*, vol. 29, November, 1918.
 A contribution to the knowledge of the Coccidae of Southwestern United States: Leland Stanford Junior University Publications, *University Series*. 1919.
 Lac-producing insects in the United States: *Journal of Economic Entomology*, vol. 12, August, 1919.
 Notes on Coccidae II, III: *Canadian Entomologist*, vol. 50, October 1918; vol. 51, May, 1919.
 Observations on some mealy-bugs (Hemiptera; Coccidae): *Journal of Economic Entomology*, vol. 12, August, 1919.
 A remarkable case of longevity in insects: *Entomological News*, vol. 30, January, 1919.
 Two species of Phylloxera from California: *ibid*, vol. 30, April, 1919.

GEOLOGY AND MINING

JOHN CASPER BRANNER, Emeritus:

- A favor da lingua portuguesa: *O Estudante Brasileiro*, vol. 1, December, 1918.
 Address at the reunion of the descendants of Casper Branner of Virginia, held at Forestville, Virginia, August 20, 1918. New Market, Virginia, 1918.
 The importance of the study of the Portuguese language: *Hispania*, vol. 2, March, 1919.
 Outlines of the geology of Brazil to accompany the geologic map of Brazil: *Bulletin of the Geological Society of America*, vol. 30, June 30, 1919.
 Seismological notes: *Bulletin of the Seismological Society of America*, vol. 8-9, September, 1918-September, 1919.

JAMES PERRIN SMITH:

- Climatic relations of the tertiary and quaternary faunas of the California region: *Proceedings of the California Academy of Sciences*, ser. 4, vol. 9, July 12, 1919.
 The Stanford school of mines: *Stanford Illustrated Review*, vol. 20, April, 1919.

AUSTIN FLINT ROGERS:

An American occurrence of Periclase and its bearing on the origin and history of Calcite-Brucite rocks: *American Journal of Science*, vol. 46, October, 1918.

GERMANIC LANGUAGES

WILLIAM ALPHA COOPER:

Goethe's revision and completion of his "Tasso": *Publications of the Modern Language Association*, vol. 34, March, 1919.

GREEK

AUGUSTUS TABER MURRAY:

Translator, Homer, The Odyssey, . . . vol. 1. Loeb Classical Library. Heinemann, London. 1919.

HISTORY

EPHRAIM DOUGLASS ADAMS:

Great Britain, America and democracy: *League of Nations*, vol. 2, February, 1919.

EDWARD BENJAMIN KREHBIEL:

The Paris covenant for a league of nations. League to enforce peace. San Francisco.

Politics and the treaty of peace: *Clubwoman*, August, 1919.

The treaty and the fourteen points: *Transactions of the Commonwealth Club of California*, vol. 14, July, 1919.

PAYSON JACKSON TREAT:

Australasia: Historical, political and social conditions: *Publications of the Foreign Trade Club*, San Francisco, February 5, 1919.

The foundations of American policy in the Far East: *Journal of Race Development*, vol. 9, October, 1918.

Japan, America, and the great war: *League of Nations*, vol. 1, December, 1918.

Japan and the great war: *Historical Outlook*, vol. 10, May, 1919.

HENRY LEWIN CANNON:

The great roll of the Pipe for the twenty-sixth year of the reign of King Henry the Third. A. D. 1241-1242. Yale University Press, New Haven. 1918.

EDGAR EUGENE ROBINSON :

The covenant of the league of nations, a statement of the chairman of the Section of international relations of the Commonwealth Club of San Francisco: *Transactions of the Commonwealth Club of San Francisco*, vol. 14, May, 1919.

Schools of public affairs: *School and Society*, vol. 10, August 9, 1919.

Stanford all the year (except September): *Stanford Illustrated Review*, vol. 20, April, 1919.

Students' Army Training Corps: *Stanford Illustrated Review*, vol. 20, October, 1918.

PERCY ALVIN MARTIN :

Latin America and the war: *League of Nations*, vol. 2, August, 1919.

The teaching of Hispanic American history: *Hispanic American Historical Review*, vol. 2, August, 1919.

LATIN

HENRY RUSHTON FAIRCLOUGH :

L'école publique Américaine: *L'Educateur*. Lausanne, Série A, nos. 38, 39, October 5-12, 1918.

Translator, Virgil . . . , vol. II, Aeneid VII-XII. The Minor poems. Loeb Classical Library. Heinemann, London. 1918.

LAW

CHESTER GARFIELD VERNIER :

Notes on judicial decisions: *Journal of the American Institute of Criminal Law and Criminology*, vol. 9, November, 1918, February, 1919; vol. 10, May, August, 1919.

MATHEMATICS

HANS FREDERIK BLICHFELDT :

Report on the theory of the geometry of numbers: *Bulletin of the American Mathematical Society*, vol. 25, July, 1919.

MECHANICAL ENGINEERING

WILLIAM FREDERICK DURAND :

Practical marine engineering for marine engineers and students. 6th edition. Revised and enlarged by Rear Admiral C. W. Dyson, U. S. N. Aldrich Publishing Co., N. Y.

The service of science in a great human crisis. Phi Beta Kappa address. Stanford University. 1919. *Daily Palo Alto*, June 16, 1919.

MEDICINE

WILLIAM OPHÜLS:

Report of the section on public health. Statement on pending legislation of 1919: *Transactions of the Commonwealth Club of California*, vol. 14, April, 1919.

ALBION WALTER HEWLETT:

Influenza at Navy Base Hospital in France: *Journal of the American Medical Association*, vol. 71, September 28, 1918.

Pathological physiology and its relation to internal medicine: *Oxford Medicine*, vol. 1, pt. 2, 1919.

ALBERT CORNELIUS CRAWFORD:

Chemistry of diphtheria antitoxin (with M. G. Foster): *American Journal of Pharmacy*, vol. 90, November, 1918.

LEONARD WHEELER ELY:

Formation of bone: *Annals of Surgery*, vol. 69, March, 1919.

Giant cell growth of bone and tendon sheath: *ibid*, vol. 68, October, 1918.

Legg's disease: *ibid*, vol. 69, January, 1919.

Study of buried bone (with J. F. Cowan): *Journal of Orthopedic Surgery*, vol. 1, February, 1919.

Tuberculosis of the spine: *International Clinics*, vol. 1, 1919.

WALTER FRANK SCHALLER:

Cerebro spinal fluid findings in herpes zoster: *California State Journal of Medicine*, vol. 16, 1918.

Complete division of the spinal cord in lower dorsal region: *Archives of Neurology and Psychiatry*, vol. 1, January, 1919.

Pathogenesis of tabes dorsalis: *ibid*, vol. 1, June, 1919.

Spinal cord injuries in warfare; symptomology and diagnosis: *ibid*, vol. 1, April, 1919.

WALTER WHITNEY BOARDMAN:

Localization of foreign bodies in the eyes (with M. M. Donovan): *California State Journal of Medicine*, vol. 17, June, 1919.

Necessity for special position in roentgenographic study of shoulder cases (with M. M. Donovan): *Surgery, Gynecology and Obstetrics*, vol. 29, June, 1919.

Osteomata of the frontal sinuses (with M. M. Donovan): *Journal of the American Medical Association*, vol. 71, November 9, 1918.

ERNEST CHARLES DICKSON:

Botulism: *Bulletin of the Canadian Army Medical Corps, O. M. F. C.*, vol. 1, 1918.

Botulism: *Journal of the Canadian Medical Association*, vol. 8, October, 1918.

Botulism: A further report of cases occurring in the Pacific states: *Archives of International Medicine*, vol. 22, October 15, 1918.

LUDWIG AUGUSTUS EMGE:

The prevention of gas pains: *Journal of the American Medical Association*, vol. 71, September 14, 1918.

HARRINGTON BIDWELL GRAHAM:

Frequent but neglected evidences of syphilis from the side of the nose, accessory sinuses and ear: *American Journal of Syphilis*, vol. 3, January, 1919.

Osteo sclerosis of the temporal bone in chronic suppuration: *The Laryngoscope*, vol. 28, December, 1918.

ALFRED CUMMINGS REED:

Pathology and treatment of influenzal pneumonia: *California State Journal of Medicine*, vol. 17, February, 1919.

Pneumonia in influenza: *New York Medical Journal*, vol. 109, March 8, 1919.

An unusual case of vagotoma: *Archives of Neurology and Psychiatry*, vol. 1, May, 1919.

Editor, California State Journal of Medicine, San Francisco, 1918-1919.

PHILIP HALE PIERSON:

Hemoptysis in children. Report of five cases: Archives of Pediatrics, vol. 35, September, 1918.

MUSEUM

PEDRO J. LEMOS:

Gift cards of our own: *School Arts Magazine*, vol. 18, December, 1918.

Optimistic school annual illustrations: *ibid*, vol. 18, February, 1919.

Pastello painting: *ibid*, vol. 18, March, 1919.

PHYSICAL TRAINING—ROBLE GYMNASIUM

CLELIA DUEL MOSHER:

Health and the woman movement. 2d rev. ed. Woman's Press. N. Y. 1918.

PHYSICS

FERNANDO SANFORD, Emeritus:

The electrical charges of atoms and ions: Leland Stanford Junior University Publications, *University Series*, 1919.

PHYSIOLOGY

JAMES ROLLIN SLONAKER:

A physiological study of the anatomy of the eye and its accessory parts of the English sparrow (*Passer domesticus*): *Journal of Morphology*, vol. 31, December, 1918.

FRANK WALTER WEYMOUTH:

Refractive differences in foveal and parafoveal vision (with D. Ogata): *American Journal of Ophthalmology*, vol. 1, September, 1918.

PSYCHOLOGY

FRANK ANGELL:

Athletics at Stanford: *Daily Palo Alto Times*, Memorial Number, Stanford edition, 1919.

The opposition to sane sport in American colleges: *Proceedings of the United States Naval Institute*, vol. 45, August, 1919.

Duration, energy and extent of reaction movements: *American Journal of Psychology*, vol. 30, April, 1919.

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OLIVER MARTIN JOHNSTON:

Florent and Clarisse (vv. 4570-4594): *Modern Language Review*, vol. 14, January, 1919.

The modern language requisite in vocational study. Proceedings of the California high school teachers' association: *Sierra Educational News*, July-August, 1919.

"Que" for "jusqu'à ce que" with "attendre": *Modern Language Notes*, vol. 34, May, 1919.

University training of the high school teacher of modern foreign languages with particular reference to French: *Modern Language Journal*, vol. 3, December, 1918.

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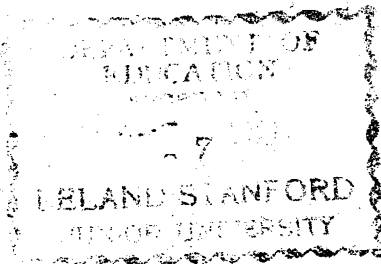
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LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS
1920 TRUSTEES' SERIES No. 36

ANNUAL REPORT OF THE PRESIDENT OF STANFORD UNIVERSITY

FOR THE TWENTY-NINTH ACADEMIC YEAR
ENDING AUGUST 31, 1920

THIS BEING THE SEVENTEENTH REPORT SUBMITTED, TO WHICH
ARE APPENDED THE ANNUAL REPORTS OF THE
TREASURER AND COMPTROLLER



STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
1920

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STANFORD UNIVERSITY PUBLICATIONS
TRUSTEES' SERIES

NO.	DATE
1. The Leland Stanford Junior University. A pamphlet of information	(No date)
2. Address of Jane Lathrop Stanford to the Board of Trustees	February 11, 1897
3. Address of Jane Lathrop Stanford to the Board of Trustees	June 1, 1897
4. Address of Jane Lathrop Stanford to the Board of Trustees	May 31, 1899
5. Address of Jane Lathrop Stanford to the Board of Trustees	October 3, 1902
6. Address on "The Right of Free Speech," by Jane Lathrop Stanford to the Board of Trustees	April 25, 1903
7. Petition filed in proceedings to establish and construe University Trusts	June 16, 1903
8. Decree in proceedings to establish and construe University Trusts	July 3, 1903
9. Inaugural address of Jane Lathrop Stanford as President of the Board of Trustees	July 6, 1903
10. Organization of the Faculty of the University	March 31, 1904
11. Report of the Organization Committee of the Trustees upon the Organization of the University Faculty	March 31, 1904
12. First Annual Report of the President	December 31, 1905
13. Second Annual Report of the President	April 30, 1906
14. Third Annual Report of the President	December 31, 1906
15. Fourth Annual Report of the President	December 31, 1907
16. Trustees' Manual	November 1, 1908
17. Fifth Annual Report of the President	December 31, 1908
18. Sixth Annual Report of the President	December 31, 1909
19. Seventh Annual Report of the President	December 31, 1910
20. Eighth Annual Report of the President	December 31, 1911
21. Ninth Annual Report of the President	December 31, 1912
22. Addresses of Timothy Hopkins, Emmet Rixford and David Starr Jordan at the Dedication of the Lane Medical Library Building	January 1, 1913
23. Tenth Annual Report of the President	July 31, 1913
24. Addresses at the installation of John Casper Branner, LL. D., as President of the University	October 1, 1913
25. The Perfecting of the Promise, a sermon by Rev. Francis G. Peabody, D. D., March 1, 1914, commemorating the ninth anniversary of the death of Jane Lathrop Stanford; The Founders of the University, an address by Hon. William W. Morrow, LL. D., Founders' Day, March 9, 1914	July 31, 1914
26. Eleventh Annual Report of the President	October 30, 1914
27. The Foundation Ideals of Stanford University, an address by Chancellor David Starr Jordan, LL. D., on March 9, 1915	June 1, 1915
28. Trustees' Manual (2d edition)	August 1, 1915
29. Twelfth Annual Report of the President	December 3, 1915
30. Addresses at the Installation of Ray Lyman Wilbur, M. D., as President of the University	January 22, 1916
31. Thirteenth Annual Report of the President	December 31, 1916
32. Fourteenth Annual Report of the President	December 1, 1917
33. Fifteenth Annual Report of the President	December 1, 1918
34. Sixteenth Annual Report of the President	December 31, 1919
35. Trustees' Manual (3d edition)	August 1, 1920
36. Seventeenth Annual Report of the President	December 31, 1920

TABLE OF CONTENTS

PRESIDENT'S REPORT		PAGE
TRUSTEES		5
TRUSTEES' MANUAL		7
BUILDINGS		7
MEMORIAL HALL		7
STANFORD HONOR ROLL		8
HOUSING		8
STANFORD HOME FOR CONVALESCENT CHILDREN		9
LOWER DIVISION		10
REORGANIZATION OF UNDERGRADUATE INSTRUCTION		11
STANFORD UNION		26
DEVELOPMENT COMMITTEE		27
ARBORETUM		27
TUITION		27
FELLOWSHIPS AND SCHOLARSHIPS		28
HOOVER WAR COLLECTION		28
MEDICAL SCHOOL		29
BOTULISM		29
STATEMENT ON ANTIVIVISECTION		30
RESEARCH		31
REPORTS OF RESEARCH IN PROGRESS		32
COMPTROLLER		42
ALUMNI SECRETARY		43
DEAN OF MEN		43
FACULTY:		
Absences		43
Resignations		44
Promotions		44
New Appointments		44
Summer Quarter Appointments		45
Deaths		46
MEMBERSHIP AND RANK ON ACADEMIC STAFF:		
Training School for Nurses		46
Library Staff		46
STUDENTS:		
Attendance		47
Student Conduct and Control		47
Marking System		48
Limitation of Students		49
DEPARTMENTAL CHANGE		50
GIFTS		51
REPORT OF THE TREASURER		52
REPORT OF THE COMPTROLLER		73
APPENDICES		
I. GIFTS TO THE UNIVERSITY		142
II. DEPARTMENTAL REPORTS:		
Anatomy		147
Applied Mathematics		149
Bacteriology and Experimental Pathology		150
Botany		150

	PAGE
Chemistry	153
Civil Engineering	157
Economics	160
Education	162
Graphic Art	164
Electrical Engineering	165
English	167
Entomology and Bionomics	173
Geology	174
Germanic Languages	177
Greek	178
History	179
Hopkins Marine Station	184
Latin	186
Law	188
Mathematics	191
Mechanical Engineering	191
Medical School	193
Stanford Hospitals	195
Medicine	198
Obstetrics and Gynecology	205
Pathology	207
Pharmacology	207
Surgery	208
Military Science and Tactics	211
Mining and Metallurgy	214
Philosophy	215
Physical Education :	
Encina Gymnasium	216
Roble Gymnasium	220
Physics	223
Physiology	224
Political Science	225
Psychology	227
Romanic Languages	228
Zoology	231
III. COMMITTEE REPORTS :	
Athletics	233
Board of Athletic Control	234
Women's Athletics	237
Lower Division Administration	238
Public Exercises	238
Public Health	243
Scholarship	243
Student Affairs	251
Vocational Guidance	252
IV. ADMINISTRATIVE REPORTS :	
Librarian	254
Dean of Men	262
Dean of Women	266
Appointment Secretary	272
University Chaplain	280
Curator of the Museum and Art Gallery	282
Registrar	282
V. PUBLICATIONS OF THE FACULTY	291

PRESIDENT'S REPORT

TO THE HONORABLE BOARD OF TRUSTEES:

Gentlemen: Herewith is submitted my report as President of the University for the academic year 1919-20.

TRUSTEES

Stanford University has lost two of its staunchest friends during the past year. Trustee Leon Sloss was a life Trustee and a typical Stanford man. No service for the University was too arduous for him. He worked steadily for years upon the details as well as the broad plan of financial management of the University. As President I found him always glad and willing to push his private affairs to one side to take up any problem of Stanford. I wish to record here the resolution passed by the Board of Trustees in appreciation of Mr. Sloss.

Resolution of the Board of Trustees, May 28, 1920:

A faithful servant has been lost to Stanford University in the untimely death of Leon Sloss, May 5, 1920.

Appointed a life member of the Board of Trustees in 1891, he performed for twenty-nine years his duties with ability and fidelity.

He gave unstintingly of his time, his experience and his judgment.

His continuous selection as Chairman of the Finance Committee for a period of over twenty years was a fitting tribute in recognition of his qualifications.

His leadership, characterized by strength, tempered with courtesy and consideration, begot confidence and following.

He died as he would have wished, in the full possession of all those qualities which made his services useful and valued to the end.

His faithful and unremitting attention to the duties of his trust as a member of the Board evidenced his sense of duty in rendering public service.

We have lost an endeared friend and associate.

We deplore his passing away. We mourn for his loss. We extend to the members of his family the deepest and most heartfelt sympathy. We share in their bereavement.

Mr. Percy T. Morgan was elected a Trustee on May 3, 1916, and died on April 16, 1920. During those years he was a most loyal and helpful Trustee. His deep interest in young people made him responsive to many University questions, but his main services to Stanford came from his financial training, his skill in accounting, and his fine judgment. We had looked forward to many years of association with him. It is my honor to make record here of the resolution passed in his memory by the Board of Trustees.

* Resolution of the Board of Trustees, May 28, 1920:

We realize more fully than ever what association with Percy T. Morgan has meant in the deliberations of the Trustees of Leland Stanford Junior University. His interest in the University, combined with his knowledge of financial affairs, served to make him in council a most valued adviser. His personal charm and unusual geniality made conference with him welcome and his unselfish devotion to the cause we all hold so important inspired his fellow trustees to greater effort on its behalf. To the personal sense of loss we add profound regret that we are deprived of his assistance.

We feel the deepest sympathy for those who through even closer ties had the greater claim upon him. We express to them our genuine sorrow, our regard and affection for him they mourn.

The following resolution was passed by the Academic Council in memory of Mr. Morgan and Mr. Sloss:

In April, 1920, the University suffered the loss by death of Mr. Percy T. Morgan, a member of the Board of Trustees since 1916; and in May, of Mr. Leon Sloss, a Trustee for the past twenty-nine years. Mr. Morgan was a valuable member of the Finance and Grounds Committees of the Board, and keenly interested in the development of the University. Mr. Sloss had been a devoted member of the Board throughout the whole period of the University's existence, and at the time of his death was Treasurer of the University. The Academic Council desires to put on record its sense of loss and its appreciation of the services of these men and of their devotion to the best interests of the University. They will be honored and their memory cherished as part of the inheritance of the University.

Mr. John Thomas Nourse, Jr., Stanford '00, was elected Trustee on February 11, 1920, vice Mr. Vanderlynn Stow.

Mr. Leland Whitman Cutler, Stanford '06, was elected Trustee on July 9, 1920, to succeed Mr. Percy T. Morgan.

Judge Max Cauffman Sloss was elected Trustee on July 9, 1920, to succeed Mr. Leon Sloss.

TRUSTEES' MANUAL

A new edition of the Trustees' Manual, incorporating the various changes that have been made in business and other organization, was issued during the year. This volume supersedes the former edition.

BUILDINGS

During the year the former Administration Building was remodeled to suit the needs of the German Department and occupied by them with the opening of the winter quarter.

The School of Education took over the building vacated by the German Department.

The Greek and Latin Departments moved into the building formerly occupied by the Business Office.

The Department of Political Science now occupies the building made vacant by the Greek and Latin Departments.

The sum of \$10,000 was appropriated for alterations in the Children's Ward of Lane Hospital.

A Nurses' Home, to cost approximately \$450,000 was contracted for, to be erected in conjunction with the Medical School.

An anonymous gift of \$100,000, to which has been added an appropriation of a like amount, will be used for the erection of dining halls and rooming facilities as an addition to the present Stanford Union.

MEMORIAL HALL

Plans for Memorial Hall, for which funds are being collected, have gone forward during the year and I submit herewith the report of Professor Emeritus John Maxson Stillman, who is chairman of the committee in charge of the project.

THE STANFORD WAR SERVICE MEMORIAL

"The campaign for the erection of a Memorial Hall in commemoration of Stanford service in the Great War and in memory of those who died in service has during the past year progressed favorably. To December 28, 1920, there has been subscribed since January 1, 1920, some \$17,000, making a total

of about \$81,000 to date, and of this to date \$32,359.36 has been paid in. All expenses of the campaign—publicity, printing, postage, clerical help, etc.—have amounted to about \$1900.

This condition of the Memorial fund has resulted mainly from two student campaigns, articles in the *Illustrated Review*, a single circularization of alumni in 1919, and the efficient help of several local committees organized by the Alumni Secretary, Mr. J. E. McDowell, Chairman of the Subcommittee on Campaign, of the Committee of Fifty. Some of these committees have already reported with very satisfactory results. Among these may be mentioned the committees for Los Angeles and vicinity, Palo Alto and neighboring towns, Corona, Hawaii, Manila, Merced and vicinity, Paso Robles, and the State Committees for New York and Oklahoma. Other committees in charge of campaigns in coast cities or other states, but whose canvasses are incomplete, have reported encouraging prospects.

The Executive Committee hopes and anticipates that another year will see the fund so far advanced that steps may be taken for specific formulation and realization of plans. To that end the committee contemplates a new appeal to the large number of the alumni, former students and friends who are not included in the present list of subscribers."

STANFORD HONOR ROLL

The following names have been added to the Stanford Roll of Honor: Harold Forbes Maxson, ex-'19; Gregor McGregor, '10; Fred Van Dyke, ex-'21; Frederic Seymour Field, ex-'18.

HOUSING

The University has been under-housed both for members of the faculty and for students. The general plan of student housing, which was recommended in the President's report of last year, has undergone considerable discussion. It seems probable that out of this discussion will arise a plan of residence halls somewhat unique in character but suitable to the local conditions at Stanford and in harmony with the desires of those particularly interested in this question. Conferences have been held both with the sorority and fraternity groups

and I anticipate that when the full plan is placed before them we will obtain their cordial support.

In housing as in other things the time has gone by for the University to build in a temporary manner. Everything that is done should be done well and it seems to me that the minimum period for which a building should be erected should be one hundred years. In other words, the wooden age at Stanford has passed. It will be desirable at some time to provide a central heating plant for the faculty residences as well as for the residence halls for students. If some building plan can be devised that will permit of brick or reinforced concrete residential structures for faculty homes the whole problem will be simplified. It seems inevitable that the University will have to take a certain responsibility in the housing question for members of its staff upon the campus. The ultimate return from money invested in such a way is bound to be small, but the service rendered fully justifies such expenditure.

STANFORD HOME FOR CONVALESCENT CHILDREN

One of the most important events of the past academic year was the installation of the Stanford Home for Convalescent Children in that portion of the former Stanford residence which is still standing. The Convalescent Home receives children largely from San Francisco and gives them that opportunity for a vacation in the country which is so important after illness. A large group of devoted men and women have taken the greatest interest in providing for the maintenance of these children. Mrs. Timothy Hopkins as chairman of the endowment committee has collected between forty and fifty thousand dollars for an endowment fund in honor of Mrs. Stanford. It is anticipated that this special fund in Mrs. Stanford's memory will be brought up to a total of one hundred thousand dollars within the next few years. It is particularly gratifying to have such a memorial to Mrs. Stanford and to have the old Stanford residence used for the benefit of young children. Mrs. Stanford was always devoted to the young. She supported certain kindergartens in San Francisco throughout her lifetime and left funds for these kindergartens at the time of her death.

LOWER DIVISION

The most important educational advance of the year was the reorganization of undergraduate instruction in the University. Following a careful study by a sub-committee of the Advisory Board and after considerable discussion by the Academic Council a reorganization of the first two years of the work of the University was completed and a so-called Lower Division was set up. This plan replaces the former major department system for the first two years of the University and, while permitting a student to seek advice from any major department, delays his choice of a major subject until the beginning of his seventh quarter or third year. Certain subjects are required from all students in the Lower Division and certain other subjects must be chosen from specified groups.

The plan which has been adopted is the outgrowth of the experience which we have had with the previous major department system and while it is not final or universally acceptable as it stands, it is a step forward, since it requires more training in fundamental subjects and brings the University in closer harmony with the junior colleges of the State. I believe it is possible to prophesy that within ten years we will look upon graduation from a junior college in the State of California in exactly the same way that we looked upon graduation from the high school ten years ago. In other words, there has been a steadily rising standard of education in the State and a multiplication of high schools and junior colleges. There is at the present time a body of high school students of such size that it will be impossible to receive the usual percentage of them seeking higher education into the universities of the State. Fortunately, with the increase of junior colleges, and the development of the normal schools into colleges, the number of students presenting themselves to the universities for training in the first two years will be proportionately fewer.

There is a considerable advantage in completing the full four years of college at such an institution as Stanford but, since it is vital that the University shall grow as a university rather than as a college, we must face soon the necessity of

either turning over the teaching of all students up to our present junior year to the junior colleges and like institutions elsewhere, or of placing these first years on a self-sustaining basis by setting them up as an entity and charging a sufficient tuition fee to meet the necessary expenses. It would not be wise for a privately endowed institution such as Stanford, with its great opportunities for university work, to spend a large part of its income in duplicating work of a grade that is now, or soon will be, handled admirably in forty or fifty institutions within the State.

The report of the special committee of the Advisory Board as adopted by the Academic Council is herewith presented, since it summarizes the various problems involved in the organization of the Lower Division. It is unfortunate that the variability in the requirements of different departments made it impossible to present any plan for the organization of the first two years that is uniformly acceptable. This applies particularly to engineering. It will be necessary to make certain exceptions to the general rules of the Lower Division. These exceptions may have to become permanent or there may be a change in the subjects presented for entrance by those who recognize early that they are going to study engineering, or it may be that the requirements for degrees in the engineering departments will be increased in point of time.

REORGANIZATION OF UNDERGRADUATE INSTRUCTION

REPORT OF A SUB-COMMITTEE OF THE ADVISORY BOARD

TO THE ADVISORY BOARD:

Your sub-committee upon the Reorganization of Undergraduate Instruction respectfully submits the following report:

As bearing upon this sub-committee's understanding of its duties, certain facts should be noted at the outset.

In January, 1917, after a series of conferences with the Advisory Board, the President of the University addressed a communication to the Departmental Faculties upon the relation of the major department system to undergraduate instruction, making certain recommendations. In response to that communication the chairman of this sub-committee, writing as a member of a departmental faculty, addressed a letter to the

President, pointing out what seemed to him to be certain defects in the present system and advocating its modification. The outstanding feature of the change suggested was that as a general rule underclassmen should not register as major students but at large and as students in an organic unit corresponding to what is known as a junior college in some universities and as a lower division in others, the major department system thereby being limited to upperclassmen.

In April, 1919, the President referred this letter to the Advisory Board for consideration. At the meeting of April 19, 1919, it was considered by the Board and upon motion its author was requested to associate with himself a committee of members of the faculty, this committee to formulate for discussion a scheme for the reorganization of undergraduate instruction. At the meeting of June 2, 1919, the formation of this committee was reported to the Board.

The members of the committee came to their task without being committed to any plan or principle of reorganization or to any reorganization at all. It was their understanding that the whole question of reorganization should be considered upon its merits and recommendations made accordingly. The committee has since had numerous meetings and has succeeded in reaching unanimous agreement upon the matters covered by this report.

The problem of reorganization has naturally presented itself in two aspects, one that of the curriculum and the other that of administration. And at every stage the curriculum has been considered first, the plan being to consider what should be done before trying to determine how it should be done.

The outstanding feature of the present system is the major subject as a basis of instruction. Should the major subject be abandoned? We think not. From the first the members of the committee found themselves in substantial agreement upon the general proposition that at some time in his university course every undergraduate should be required to specialize to some extent upon some one subject or at least upon a small group of related subjects forming a continuous sequence. By such a requirement alone will it be rendered certain that every student's course shall include indispensable elements of continuation and concentration. In such a requirement is what seems to us to be the vital principle of the major subject as introduced by Dr. Jordan at Indiana and Stanford and as since adopted in some form by the great majority of progressive American universities.

We then found ourselves agreed that the time in a student's course at which specialization should begin is no essential part of the major subject system itself but must in the nature of things depend upon various factors. It seems reasonably clear, however, that entrance upon major work ought not ordinarily to be postponed beyond the beginning of the junior year. By that time, if ever, the student should have found himself and discovered the particular field within which specialization is for him likely to be most interesting and profitable. In the upper division, therefore, it appears to us that the major subject ought to be continued as a basis

of instruction. Furthermore, we can see no reason why the major department system of administration should not be continued in the upper division. In practice the departmental system has proved itself to be admirably adapted to the direction and supervision of advanced students. Very possibly changes might advantageously be made even here; but they may well await the developments of the future. We do think that substantial changes ought to be made in the organization for underclassmen and it seems wiser to concentrate our attention upon that problem.

We assume at the outset that for an indefinite time to come the instruction of underclassmen is to be an important part of Stanford's work. It may be that in the course of time it will seem best to leave the instruction of freshmen and sophomores to other institutions and that Stanford will one day instruct advanced students only. The development of the junior colleges both as independent institutions and as upward extensions of the high school makes such a consummation distinctly possible. But it seems to us unlikely that this stage of University development will be reached in the near future. The junior colleges, although steadily increasing in numbers, are as yet comparatively few. Most of them are poorly equipped, their faculties small and overworked. In view of these facts and of the active competition of other universities for advanced students, it seems to us much safer to assume that for a considerable time to come Stanford will continue to depend largely upon her own freshmen and sophomores for an adequate supply of well-prepared juniors.

On the other hand we cannot ignore the growth of the junior college. A recent bulletin of the Bureau of Education shows that the junior college movement has made rapid growth during the past ten years. Sixty-nine junior colleges have been organized since 1907 and more than half of them since 1915. The enrolment in public junior colleges increased 168% from 1915 to 1917. It is the consensus of opinion among those who have studied the movement that the junior college has come to stay. Under the legislation of 1907 California has been a leader in the movement. The growth of our junior colleges was naturally checked by the War; but the setback could not be more than temporary. In this connection the action of the last legislature in establishing a great junior college at Los Angeles as a part of the University of California is significant and convincing. It is useless to shut our eyes to the fact that already the junior colleges are sending us graduates and are destined to continue to do so in ever increasing numbers, providing we are willing to receive them and make it practicable for them to graduate at the end of two years.

The University is already emphasizing the instruction of advanced students. We have limited the number of freshmen who may enter in any one year. We have not limited the number of advanced students. On the contrary we have desired and do desire to increase their numbers. But, having limited the number of underclassmen, we have thereby restricted to other institutions the source of the increased supply. We must depend upon transfers from other universities and graduates from junior colleges.

If our advanced students must in the future be largely recruited from other institutions we cannot safely ignore the character of courses to which they have had access before coming here. It will not be good policy to erect barriers against these recruits in the form of long and elaborate sequences of major requirements. In some cases, particularly in the applied sciences which now claim so large a portion of the major student's time, such sequences seem at present unavoidable; but in view of this deliberately adopted University policy of attracting advanced students it seems clear that, so far as reasonably practicable, the sequences of major courses should be so arranged as to make it possible to complete all major requirements within two years. Only by such a policy can we expect to attract advanced undergraduates from other institutions.

Now, if this policy were adopted, it would seem to follow that the major subject ought not to be made the basis of organization for the work of underclassmen but, apart from necessary prerequisites, to be made rather the distinctive feature of the work of upperclassmen; that is, unless some controlling consideration from the student's viewpoint makes the early choice of a major subject practically necessary. We believe that, outside of the applied sciences, there is, as a general rule, no such consideration. It is no doubt true that every student who has made up his mind that he wants to enter a particular profession or to study a particular subject ought to have no obstacle arbitrarily put in his way. We believe that under any system it ought as a rule to be possible for him to take any course at any time that he is prepared to take it, subject only to the usual quantitative restrictions and to the exigencies of the schedule. But it does not follow from this that every student ought to be required to select a major subject at the beginning of his course; much less does it follow that the major subject must at that time be made the basis of the University's administrative relation to him.

On principle it seems difficult to support the proposition that every student should be required for his own good to select a subject for specialization as soon as he enters the University. All too frequently he is without the necessary data for an intelligent choice. It used to be said that the broad high school course could safely be depended upon to point the way and doubtless there was something in the argument; but, owing to the rapid growth of the elective system in the high school, it can no longer be relied upon to discharge this function. It will not suffice to say that the majority of worth-while students actually choose their vocations before they come here and that the rest ought to do so. Even if we accept this proposition as wholly true, which many would decline to do, it is far from conclusive. Outside of the professional schools and the departments of applied science, most of our courses are, for students who do not expect to teach, distinctly non-vocational. It is one thing for a student who has decided to be a chemist or a civil engineer or a teacher of French to select his major subject; but the choice of a major subject is a very different thing for a student who expects to be a librarian, a secretary, a lawyer, a clergyman, a banker, a merchant, a manufacturer,

or a railroad man. What he needs in each instance and what he generally wants is a liberal education.

Indeed your committee has reached the conclusion that, instead of being required to pursue a major subject as now, all students should, during their first two years in the University, be required to devote a considerable portion of their time to the pursuit of a liberal education along somewhat definite lines. There never was a time when the advantages of liberal education were so vigorously proclaimed as today. The engineering societies vie with the bar associations in asserting the importance of a broad liberal education as a foundation for the most useful professional careers. We all believe in a liberal education. In advising major students we all try to arrange programs that will secure this end, but we invariably meet with two serious difficulties. On the one hand departmental offerings tend to sequences of intensive courses, making general courses the exception. On the other hand departmental schedules are independent of each other and serious conflicts abound so that it is almost out of the question for any student to carry to completion any program of liberal courses that he may have originally planned. It is notoriously becoming more difficult to make out programs for freshmen. We believe that better results would be secured if the University were to meet this situation by providing an adequate number of courses, particularly adapted to the needs of students who do not expect to specialize in the several subjects represented and scheduling them in such a way as to make them practically available. Furthermore we believe that it is possible to indicate certain courses which either absolutely or in the alternative all students ought to take.

In reaching this conclusion we have not been unmindful of the obvious fact that the rigid curriculum of fifty years ago has been laid aside forever. Nor are we unmindful of that other obvious fact that the number of possible combinations of liberalizing studies is so great that no two minds working independently could ever agree upon an identical program. And yet, working together, the members of this committee have agreed upon a plan that is satisfactory to them all.

In the first place we are willing to submit without discussion the proposition that every recipient of the degree of bachelor of arts ought somewhere, either in the secondary school or in the University, to have taken a course in elementary algebra and one in plane geometry. It has generally been taken for granted that every matriculant would have had both these courses in the high school; but owing to the development of the elective system in the high school, particularly in California under the rules of the State Board of Education, this may no longer be safely assumed. Since it is not to be supposed that these subjects would be offered in the University, a requirement that they should be taken some time would necessarily amount to prescribing these subjects as entrance requirements. In the interests of a sound educational policy we recommend that this should be done.

It is of course to be assumed that the present entrance requirement as to English composition will be indefinitely retained. But we believe that

the importance of the English language and its literature is so obviously great as to justify further English requirements. The California State Board of Education now prescribes two high school units in English (each unit representing five hours weekly for one year) as a requirement for high school graduation. We submit that the University should prescribe an equivalent amount of English as an entrance requirement, whether the matriculant comes from a California high school or elsewhere. Furthermore, the practical importance of English composition is so great and the deficiencies of matriculated students in that respect are so nearly universal, that we think it would be wise to require that every student should take not less than six units in this subject before the end of his first two years. In order to make it more practicable to give this course a true university character it is believed that it should not be taken until the beginning of his second year. We therefore recommend that during his second year each student in the University shall be required to take six units of English composition.

No foreign language is now required for high school graduation. The University requires none for the bachelor's degree. We are persuaded that the reactionary pendulum has swung too far from the languages. We believe that the educational value of the study of a foreign language is so great as to justify a minimum foreign language requirement. Our only difficulty has been in determining its extent. On the one hand the requirement must be substantial in order to justify its adoption. On the other a requirement applicable to all students must necessarily approach a minimum. The precise amount is a matter of judgment. In our judgment the University ought to require that every student, either in the high school or in the University or in both together, should have taken the equivalent of one high school major in Foreign Languages as defined by the State Board of Education, i. e., three units in one language or two units in each of two languages. This requirement might be wholly met in the high school by taking one language five hours weekly for three years or by taking each of two languages five hours weekly for two years. In this connection it should be noted that it has been customary for Stanford to consider one year's work at Stanford (three quarters) as the full equivalent of two years in the high school when the same number of recitations weekly are held in both cases. This requirement could therefore be met in the high school as indicated or in the University by taking approximately 22 units in one foreign language or 15 units in each of two. We recommend that such a requirement be established.

Under the present rules of the State Board of Education every high school graduate is required to have taken a year's work in some laboratory science. We submit that more science ought to be required for graduation from the University. In the interests of general intelligence it appears to us that every University graduate ought to have taken a substantial course in general biology and a similar course in one of the two fundamental physical sciences, physics and chemistry. Time limitations and the importance of avoiding overmuch repetition are such that it would be unwise to require that both of these courses should be taken in the

University. On the other hand the superior educational value of university instruction in science, as opposed to that of the high school, would seem to justify a requirement that at least one of the suggested courses must be taken in the University. The other might be taken in the high school. And in view of the fact that a number of high schools offer courses in general science which are accepted for entrance credit and often constitute the only science taken by high school students, it would seem that general science might well be accepted in lieu of the science which may be taken in the high school. As to the time which should be occupied by acceptable high school and University courses, it is obvious that exact equivalence in content is unnecessary and accordingly the best plan would seem to be to adopt as a standard the time usually devoted to such courses in the high schools and universities respectively. This appears to be five hours weekly for one year in the high schools (one high-school unit) and three hours weekly for one year in the universities (nine university units). We recommend the adoption of a science requirement as thus outlined, such requirement to be fulfilled during the first two years.

History is another subject that must occupy an important place in any scheme of liberal education. All concede that an acquaintance with United States history is essential to intelligent American citizenship. The California State Board of Education requires a course in United States History and Government for high school graduation. But it seems quite obvious that United States history cannot be understood or appreciated without some knowledge of the history of the great European nations. Yet under the high school elective system now prevalent the high schools can no longer be depended upon to supply that knowledge to matriculants. In the interests of good citizenship as well as of liberal education we believe that every student ought to be required to have taken, before the end of his first two years, not only a course in United States history but also such a course in general history as will enable him to interpret the history of our own country. As to the precise content of this general course we think a liberal policy should be pursued. So long as the main purpose of the course is kept in mind, much should be left to adjustment. Our own judgment is that a course in universal history would be most useful to the average student; but a less comprehensive, and at the same time more intensive, course in modern European history would doubtless also suffice. So, too, the end might be served by a shorter course in European history together with a course in English history. As to when these required courses in United States and general history should be taken, practically the same considerations apply as in the case of the sciences. Here as there it seems unwise to require that both required courses should be taken in the University; but in view of the superior educational value of a university course in history, involving as it does the use of critical methods and access to an adequate library, we believe that, as in the case of the sciences, it would be wise to provide that one of the required courses in history must be taken in the University. The other might be taken in the high school. The time devoted to one of these courses if taken in the University ought, we think, to be about nine

units. A course taken in the high school would naturally run through the year and amount to one high school unit. Inasmuch as the California State Board of Education prescribes a combined course in United States History and Government for high school graduation it would seem wise to accept such a combined course as a satisfactory substitute for the course which may be taken in the high school. Accordingly we recommend the adoption of a history requirement as thus outlined, such requirement to be fulfilled during the first two years.

We come now to a consideration of what is perhaps the most important of all the required courses that we here recommend. Generally speaking, all freshmen are either now or soon to be voters. Does not the University owe them a duty as such? If our tritest sayings are true these freshmen are destined to become leaders in their respective communities. They are forming the political, economic, and social ideas that will characterize that leadership. And they are forming them now while the air is full of strange doctrines and without waiting for a critical and scholarly insight. Can the University not render a substantial social service by providing a sound basis of elementary scientific facts and principles by which the validity of these doctrines may be tested? Such attempts are being made elsewhere. Columbia, Chicago, Williams and Dartmouth have all announced courses which, while differing in detail, have all the common purpose of dealing with present-day problems of American citizenship. We believe that the University ought to require of every freshman a general course in political, economic and social science. Such a course should be intensive enough to be scientific in character; if possible it should serve as an introductory course to further work along these respective lines in case a special interest in any of them should be awakened in any student; but it should also be comprehensive enough to involve a consideration of the more fundamental aspects of the dominant problems of American citizenship. In offering such a course the departments of economics and political science would necessarily cooperate and, in view of the ethical aspects of the more important problems, it would seem that the department of philosophy might also render useful assistance. To this course it seems to us twelve units might well be assigned, the course running four hours a week through the autumn, winter and spring quarters. We therefore recommend that such a course should be provided and required of all freshmen.

This completes the list of specific requirements which we are disposed to recommend. For convenience they are here summarized:

- I. ENGLISH. To be required for admission to the University: (1) English composition as at present; (2) the two high-school units of English prescribed by the California State Board of Education. To be taken during the second year in the University: six units of English composition.
- II. FOREIGN LANGUAGES. To be taken either in the high school or in the University or in both together: 22 units (3 high-school units) in one foreign language or 15 units (2 high-school units) in each of two foreign languages.

III. NATURAL SCIENCES.

1. *Biological Science*. Nine units in the University or one unit in the high school.
2. *Physics or Chemistry*. Nine units in the University or one unit in the high school.
3. Of the two required courses in natural sciences indicated above one must be taken in the University and one may be taken in the high school. In lieu of the course which may be taken in the high school, one high-school unit in general science may be offered.

IV. HISTORY.

1. *United States History*. Nine units in the University or one unit in the high school. If taken in the high school the course in U. S. History and Government prescribed by the California State Board of Education for high-school graduation will suffice.
2. *General History* (*universal history, modern European history, or English and European history together*): nine units in the University or one unit in the high school.
3. One of the two required courses in history indicated above must be taken in the University and one may be taken in the high school.

V. PROBLEMS OF CITIZENSHIP. A general course in political, economic, and social science with special reference to present-day problems of citizenship: 12 units required of all first-year students.

Upon consideration it will be evident that compliance with the specific requirements just enumerated will leave ample opportunity for every student to elect courses for which he is prepared and in which he may be particularly interested. For the student whose high-school course has been least favorable with respect to these requirements—that is to say, for the student whose preparation has included no foreign language—they will be found to control 58 of the 90 units which normally constitute the first two years of the undergraduate's work. This leaves 32 units for free electives. For the student whose high-school preparation has been most favorable—i. e., has included enough foreign language to satisfy that requirement—these specific requirements will claim but 36 units, leaving 54 for electives. It is to be expected that an increasingly large number will satisfy the foreign-language requirement in the high school. It is evident that those who do may, if they so desire, discharge all the remaining specific requirements except English composition in their freshman year. Without some additional check their sophomore year would thereby become almost wholly elective. But the principle of unrestricted election has been abandoned practically everywhere in favor of the principle of distributing electives within recognized groups. We think this development is the result of experience and in the interests of liberal education. For this reason and in order to secure breadth in both years we think it would be advisable to apply a general principle of distribution. Accordingly, we recommend that during each of his first two years every student shall be required to take nine units of work within each of the following groups: (1) Language and literature, English and foreign and formative

art; (2) natural sciences and mathematics; (3) social sciences, including history, political science, economics, philosophy and education.

Upon consideration it will be seen that this general distribution requirement is in no sense severe. Since any subject in which a student might desire to specialize would necessarily fall within one of these groups, the pursuit of a favorite subject would not thereby be hindered. And, since the same course could be counted toward both the specific and the distribution requirements, the latter would be least operative in those cases in which the former would, owing to the nature of his high-school course, claim most of the student's time. Thus the requirement of distribution within the first group (language and literature) would mean practically nothing to the student who must do all his foreign-language work in the University. And, since the specific requirements would in any case call for nine units in science one year, the only effect of the distribution requirement as to the second group would be to force an election of nine units in natural science or mathematics during the other year. Finally, unless the required courses in history and the problems of citizenship were both taken in the freshman year, the distribution requirement as to the third group would be practically inoperative, since both these courses fall within that group and, by being taken in successive years, as would usually be the case, they would fully satisfy this requirement as to each year. As already indicated, the purpose of this general distribution requirement is simply to force a fair distribution of work and to insure that during the first two years of his course every student shall, for the sake of his own intellectual development, maintain some contact with each of these widely separated fields of thought and learning.

In recommending these changes in the curriculum we realize that they can not be brought about without corresponding change in the President's budget. If they are adopted it is very clear that departments responsible for courses required either absolutely or in the alternative must be given whatever financial support may be reasonably necessary to enable them to assume the added burden. These recommendations are therefore made upon the express condition that such support may be rendered available.

On the other hand it should be said that we do not regard it as necessary to provide for all these changes immediately and at one and the same time. Obviously they should not be made fully applicable to students now in the University or to students who may presently transfer from other universities. It ought to suffice to make them applicable to entering students whenever the University is prepared to deal with students upon the basis of the change proposed. We simply recommend that the program here outlined shall be put into effect as a whole and as speedily as is reasonably practicable.

We come now to the question of administration. Is any machinery needed, in order to carry out the proposed plan, that is new or different from what we have now? One thing is clear at the outset. The present powers and functions of the Academic Council ought not to be disturbed. Is it advisable to set up a definite collegiate organization with a separate faculty responsible to the Academic Council? It seems equally clear that

this is not necessary, for the work of instruction under the proposed plan must needs be done largely by our present Faculty. Then should everything be left to the various departments? We do not think so. As already indicated we believe that, while the major subject may well be made the basis of administration for advanced students whose work is strongly characterized by the major subject, it ought not to be made the basis of administration for those students whose principal concern is with laying the foundations of a liberal education. We are of opinion that, so far as is reasonably practicable, these students should be dealt with administratively from a nondepartmental point of view.

The proposed plan is a pronounced change in the scheme of instruction for underclassmen. It leaves them free to specialize along the line of any ascertained interest, provided only the proposed requirements are not thereby defeated; but it does in effect require that for the first two years of the student's course the pursuit of a liberal education shall take precedence over specialization. For the successful working of the plan it is important that he should appreciate this emphasis for the time being. He should if possible be made to feel that along with all other underclassmen he is engaged in the pursuit of a liberal education as the big thing at this time and not as a side issue. He should by no means be induced to think of himself as primarily at home in a particular department and as only a visitor in others. He should regard himself primarily as a student in the University, equally at home in all the departments. For that reason he should be dealt with from the point of view of the whole University.

Furthermore, it is of the greatest importance that the plan shall be administered with substantial uniformity. Could we really expect uniformity if its administration were generally entrusted to the various departments? It would not be enough that the requirements should be printed and that the departments would endeavor to enforce them loyally. No set of rules was ever devised that did not give rise to questions of interpretation and application. Such questions must be answered by those in charge of their administration. But each department has an individuality of its own, an individuality characterized by administrative habits, policies, and point of view. For this reason differences in the application of these rules, differences in interpretation and emphasis, would inevitably appear if the matter were left to the various departments. Similar considerations have led us to recognize in the past that, for the sake of uniformity, the scholarship rules of the University must be administered by a University committee and not by the various departments.

For these reasons we believe that during the first two years of their course undergraduate students should be under the general supervision of an administrative committee. This committee should be composed of members of the Academic Council and appointed by the President upon the basis of individual fitness and interest in the work and without regard to academic rank or to any definite principle of departmental representation, although, in making up the committee care should be taken that it be broadly and fairly representative of the Faculty as a whole. The size

of this committee should not be fixed too rigidly. When the proposed plan is put into effect its supervisory functions will naturally be limited to the entering class and its membership may therefore well be smaller than later when they will extend to students of the whole lower division. For another reason we believe that the committee should be comparatively small at the outset. Many questions of interpretation, adjustment, and administrative detail must necessarily be considered and promptly answered at the very beginning of the committee's work. Experience shows that in such a situation a small committee can work more effectively than a large one. For these reasons we believe that the committee should be composed of five members at first and increased in size later as need shall appear. Accordingly we so recommend.

This committee should, we believe, be under the chairmanship of a University officer upon whom the executive work of the committee would necessarily fall in large measure. The chairman should be an active member of the teaching profession, of recognized standing in his profession and commanding the respect and confidence of the Faculty. He should if possible be at present a member of the Academic Council. He should, of course, be a man of distinct ability as an organizer and administrator. Owing to his close relation to the work of instruction he should be appointed by the President in the same manner as departmental executives.

We recommend that the committee just described should, under the President and Academic Council, be made responsible for administering the plan proposed. It should be the duty of this committee to make the instruction of underclassmen its first concern. We believe it would be wiser to leave it to the committee to work out the details of administration and to make such recommendations for administrative development as may from time to time seem advisable; but lest the duties of the committee might seem too vague and general we proceed to consider certain activities that in our judgment ought to be within the scope of its duties.

As already indicated, we think that one of the most important functions of the committee should be the adjustment of all questions as to compliance with the proposed requirements of the curriculum. These questions will arise in various ways. For example, the records of transfers from other institutions must be examined by some university committee to see whether these requirements have been met and this seems the appropriate one. Here it will be possible to observe only the spirit as opposed to the letter of the proposed requirements. Authority must be given to make minor adjustments in such cases. Again, inasmuch as under the proposed change no student will register as a major student in the upper division until he has completed two years of University work and complied with the proposed requirements as to the curriculum, it seems clear that there ought to be some central University agency whose duty it shall be to consider all questions arising in specific cases as to the application of these rules as well as to certify in all proper cases that such conditions have been met.

Closely associated with this function is the formal approval of the study cards of underclassmen. It is obvious that if the University shall be in a position to insist rigidly upon complying with these requirements care should be taken that through oversight or inadvertence cards are not approved which fail to make proper provision for the seasonable discharge of these requirements. For this reason it seems desirable that approval should be made at some central office. In this connection it should be noted that a great practical advantage may be gained by centralizing this function in some office where a record can be kept of actual registration for the various courses as registration proceeds. The committee can ascertain in advance the number of students who can be accommodated in any particular course. When that number is reached further registration can be automatically prevented. This system is in successful operation elsewhere. Its advantages are obvious.

At this point a question will naturally arise. Who will advise students in regard to their study cards? What is to become of expert advice? The answer is that it should be the duty of the committee to avail itself of expert advice wherever possible. Students should be encouraged to consult and advise with their teachers wherever practicable. And in any case in which a student has expressed a desire to specialize in any subject he should be at once directed to confer with the department in charge of that subject. At each registration period during his membership in the Lower Division the Committee on Lower Division Administration shall give each student opportunity, if he so desires, to designate in writing the particular department in which he expects later to do his major work. In case any department is thus designated it shall be the duty of the Committee to direct the student to that department for consultation and advice in regard to his electives before the approval of his study list. As to program-making in general, the experience of other institutions would seem to indicate that under the plan proposed little difficulty would be experienced. It should be remembered that a considerable part of the regular work of the underclassmen will be controlled by the proposed requirements themselves. As already pointed out the natural result of the plan, outside of the departments of applied science, will be to force the great bulk of major-subject work into the junior and senior years. In those cases in which certain courses are laid down as prerequisite to entrance upon major work in the upper division it will be an easy matter to call attention to such prerequisites through the usual avenues of publicity. It shall be the privilege of each department to prescribe such prerequisites for admission to its major work as it may deem necessary. The student who knows what his major subject will be will naturally, of his own motion, take any courses that may be prerequisite to majoring in his chosen subject. As to courses outside of the major department prerequisites and of those required of all underclassmen under the proposed plan, it seems desirable that the greatest freedom of election should prevail. With proper publicity as to what is actually required, both by way of University prescription and of depart-

mental prerequisites, and with an adequate supply of elective courses made really elective by a properly adjusted schedule, it is believed that the common intelligence of the students will largely eliminate the difficulties that have always been associated with the study cards of underclassmen. The committee should, however, make adequate provision for advising and consulting with students and regard this as one of its most important functions. Some system should be worked out. Either the committee should be made sufficiently large to enable the several members to handle the students in groups or it should, with the approval of the President, provide for a group of Faculty advisers selected upon the basis of special capacity for this particular work.

Another duty of the committee should be to make provision, in consultation with the President and the departments concerned, for offering such courses as will enable the students to comply with the requirements here recommended. In some instances new courses must be offered; in others facilities for additional students must be provided. Departmental cooperation must be secured. Many adjustments must be made. The whole situation should be canvassed by some administrative body capable of dealing adequately with the various problems involved.

Another duty of the committee should be to provide, in consultation with the President and the departments, for a sufficient number of proper courses for election by underclass students. The need for such courses is pressing. The several departments are and must always be primarily responsible for instruction within their respective fields. The very nature of a university as an institution of advanced learning is such that every department almost inevitably feels that its first duty is to make adequate provision for the training of specialists. Such has been the prevailing departmental point of view here as elsewhere. Our general practice has been to plan carefully for the major student and let the non-major fare as best he could. As a result sequences of intensive courses, admirably adapted to the training of specialists, are the rule; general courses adapted to the needs of non-specialists are the exception. This is all very well for students in the professional departments which claim practically all of their students' time; but in the other departments, which under the rules of the University can claim but one-third of that time, the situation is anomalous. In all of these others all of their students are in effect major students during one-third of their time and non-majors during the other two-thirds; but the departmental offerings are carefully planned for the one-third and comparatively little is planned for the two-thirds. What is needed, in addition to adequate provision for the required courses, is a sufficient number of general elective courses of true university character, given by teachers as able as the University can afford, and open to underclassmen. The number need not be very large, for many students will wish to use much of their free time in anticipation of major-subject work, but we do need a substantial number of such courses. Here is a field for committee activity and a clearly indicated duty. The whole situation should be canvassed with a view of seeing what can be done in the matter.

Closely related to the provision of elective courses is the reformation

of the schedule. Many of the courses that are now nominally open to underclassmen are rendered practically unavailable by conflicting schedules. For this nobody is to be blamed; it is a product of conditions. Departmental responsibility for advanced courses operates to the disadvantage of the non-major; for each department feels compelled to schedule its own courses with reference to each other and not with reference to the courses of other departments. It is not to be supposed that this necessity and the resulting conflicts could be wholly avoided under any system; but it is believed that much might be done to improve the situation by a careful survey of the whole field and an attempt upon the part of the proposed committee to secure departmental cooperation in the scheduling of courses actually open to underclassmen and particularly adapted to their needs.

It may be objected that the duties thus outlined for the proposed committee will be too comprehensive for any one group of men. But it is to be noted that some of these duties, as, for example, the provision of new courses, are likely to be burdensome only at the outset. And it should be remembered that the plan contemplates whatever administrative development experience may indicate as desirable.

A serious difficulty remains to be considered. Under the rules adopted by the Academic Council but one-third, or sixty units, of the student's work may ordinarily be prescribed by the major department. This leaves two-thirds of his time nominally open for free electives. In all that has been said hitherto we have assumed that this general rule will remain unchanged. Our effort has been to provide for a considerable portion of two-thirds of the student's time upon the assumption that the other one-third claimed by the major department might be largely concentrated in the upper two years. However, these rules recognize an exception in the case of the professional departments of applied science, which are permitted to claim an unlimited amount of the student's time. In practice some of the engineering departments have in the past found it to be necessary to claim so much of that time as to leave very little opportunity for electives. This committee, in accordance with what it understands to be the prevailing opinion within the engineering profession itself, believes that it will be fortunate for the profession as well as for the public, when the education of engineers shall rest upon the foundation of a liberal education. This opinion seems to justify the assertion that two years of liberal culture after leaving the high school would be a conservative requirement. However, it seems impracticable to achieve that end at this time and we have therefore decided to recommend the adoption of what may be regarded as a compromise program. We believe that the recommended specific and distribution requirements should be made applicable to all students. If this recommendation be adopted it will necessarily have the effect of appropriating somewhere near to a year of the undergraduate time of engineering students. We believe that this is an advance that can be safely made and that therefore ought to be made.

On the other hand, viewing conditions as they are, it seems likely that these departments will feel themselves unable to go farther in this direction at this time and that they will regard it as necessary to claim

for their own courses practically all of the time remaining to the prospective engineer after complying with the proposed requirements. It appears that these courses are strongly characterized by intricate sequences involving frequent adjustments. Accordingly these departments find it necessary to assume a very early supervision of the programs of their prospective major students. In view of this situation we recommend that, for so long a time as these departments shall find it necessary thus to avail themselves of the exception recognized by the Academic Council, and for students who may be prepared to definitely select their ultimate major in these departments, the present relations between such departments and their major students, with especial reference to the making out of study cards and subsequent changes therein, shall continue without change. Such students shall, however, be members of the Lower Division and shall file their study cards with its office.

A question remains as to the name which should be given to the organization proposed. "Junior College" has been considered, but owing to its association with the high school and with various weak institutions on the one hand, and to the appearance of the word "Junior" in the official name of the University on the other, this suggestion has been rejected as unsatisfactory. One other conventional designation remains and that is "Lower Division." We see no disadvantage but rather a distinct advantage in the fact that it is in use in other institutions and has acquired a definite meaning. We therefore recommend its adoption as the official designation for the proposed organization of the first two years of undergraduate work.

Very respectfully,

A. M. CATHCART, Chairman.

W. H. CARRUTH.

W. F. DURAND.

C. A. HUSTON.

R. E. SWAIN.

STANFORD UNION

The Stanford Union and Women's Club House have occupied an important place in the activities of the University community. The gift of \$100,000 for the extension of the Union together with its duplication by the University will soon make possible the erection of a third building which will complete the open quadrangle of the Union buildings and will furnish dining accommodations for over 300 and living accommodations for something over 100 men. This will be a relief to the existing conditions which are particularly unsatisfactory as far as dining room facilities are concerned.

THE DEVELOPMENT COMMITTEE

The Development Committee has continued its study of the finances of the University and of its general management. Its recommendations as adopted by the Board have led to a complete rearrangement of the business of the University which has been unusually satisfactory to the whole community.

ARBORETUM

In spite of the series of dry years there has been a steady improvement in the Arboretum and an increase in the number of plants there. Under the supervision of Comptroller Roth and Professor Abrams, within a few years we anticipate a marked increase in the scientific value of the Arboretum, considered as a collection of trees. There has been a general improvement in the grounds of the University and the policy adopted some time ago of increasing the number of oak trees is being put into effect, so that within a few years the vegetation about the university buildings will be more in harmony with the natural surroundings.

TUITION

On January 1, 1920, a tuition fee of \$40 per quarter was put into effect in accordance with the following resolution of the Trustees:

That, from January 1, 1920, all students be required to pay a tuition fee of \$40 per quarter in addition to the existing incidental and other special fees, which latter shall be extended to include all students in the University. The new tuition fees shall not operate to increase the tuition now being paid by professional students.

While there was considerable agitation at the installation of this long anticipated plan there was the largest percentage of re-registration for the winter quarter 1919-20 that we have ever had in the history of the University. Through the tuition note system it was possible for any student who was financially unable to meet the tuition fee to enter into an agreement with the University to defer the payment of his tuition for a period of seven years. A considerable number of students were, after investigation and approval by the President, allowed to present notes instead of payment of fees.

With the installation of the tuition fees sufficient income was added to the University so that the professors' salaries could be increased and the following scale was put into effect:

Professors	\$4500 to \$7500
Associate Professors.....	\$3250 to \$4000
Assistant Professors.....	\$2500 to \$3000
Instructors	\$1800 to \$2400

In addition 30 graduate scholarships of \$200 each and six fellowships of \$750 each were created and a pension fund was founded. This was made necessary by the failure of the Carnegie Foundation to carry on its original plan for the benefit of the members of the faculty.

FELLOWSHIPS AND SCHOLARSHIPS

The increase in the fellowships and scholarships established by the Board last year and those that have come to us by gift have been of great advantage to the worthy members of the student body, particularly during this period of financial strain. Speaking broadly we find that the holders of scholarships do unusually satisfactory work. Such an institution as Stanford needs to draw its students from all parts of this country as well as the world. It would be most desirable if scholarships of a geographical character could be set up so that we might have recommended and superior students from every county in the State as well as from the various states of the Union.

By action of the Board of Trustees 15 scholarships have been established, the holders to be known as Stanford Scholars. These scholarships are without pecuniary award and are granted on the basis of special scholastic attainments.

HOOVER WAR COLLECTION

The Hoover War Library has grown steadily during the year through gifts and purchases. Professor E. D. Adams and Professor Ralph Lutz have been actively engaged in assembling and classifying this notable collection. Several students have already entered the University in order to do research work with the help of this collection and it is inevitable that there will be a considerable increase in the number of such students from year to year.

MEDICAL SCHOOL

The Medical School has made steady progress since the return of many members of the staff from the war. The new Stanford Hospital is not only rendering a high service in the community but is a financial success. Plans are now being formulated for the erection of an adequate nurses' home. Such a building was proposed in the building scheme adopted by the Board five years ago but, because of other pressing needs, it has been delayed as long as possible. The backbone of a teaching hospital is a school of nurses. Without adequate housing such a school cannot be maintained nor can a hospital be a financial success.

BOTULISM

I wish to call particular attention to the research work upon botulism which has been going forward in the laboratory of internal medicine under the charge of Dr. Ernest C. Dickson. This work is in cooperation with similar studies at the University of California and has been financed by a gift from the National Cannery Association. Stanford University has taken a prominent part since the beginning in the study of this particular form of food poisoning. By a series of circumstances the work of Stanford and the University of California in this direction has saved the olive industry of California, which was demoralized by the occurrence in several different states of cases of food poisoning due to the bacillus botulinus in olives. These studies form a good example of how closely the welfare of civilization depends upon research.

This is of particular importance at the present time since there is the most dangerous attack that has ever been made upon research in the United States in the initiative amendment No. 7 on Antivivisection. So important is this subject that I wish to record here the result of the joint action of the Stanford Board of Trustees with that of the Regents of the University of California. I think that this is the first time that the two universities have united upon a public question of this type involving legislation, but the subject is worthy of such action. Unfortunately we can anticipate a continuation of this attack upon the development of medical

research. The best answer is always going to be the character of the work which is done and the results obtained.

The principal difficulty in all research work is the inability of many to recognize the significance of so-called fundamental research. Anyone can see the desirability of making a study of practical subjects but few seem able to grasp that only by the piling up of enormous funds of information can we meet the practical problems of the world as they arise. In the University, particularly, protection is required for the professor or research worker whose work is basic and no one but the professor concerned, who is an expert in his subject, can decide what type of study is basic. In other words, there can be no judge except the research worker himself as to the importance and the necessity of the work which he is doing.

STATEMENT OF THE BOARD OF TRUSTEES OF STANFORD UNIVERSITY AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA AGAINST THE PASSAGE OF CONSTITUTIONAL AMENDMENT NO. 7 ON ANTIVIVISECTION.

The Regents of the University of California and the Board of Trustees of Stanford University have united in a public statement pointing out the menace to the public health, the injustice to them, and the danger to education, science and research in the initiative measure No. 7 on antivivisection. The statement is as follows:

"The advance of sanitation, modern medicine and physiology and the teaching of biology all rest on the use of appropriate animals for demonstration and research. The control of epidemic diseases, the management of surgical operations and of childbirth, and the certification of milk and water supplies would be impossible without the knowledge gained by such studies. In fact the whole structure of the present-day protection of the public from disease rests upon studies made upon animals.

"The University of California and Stanford University are vitally interested in this initiative measure, since its passage would stop the research work now going on in their medical schools, hospitals and laboratories, and in the Bureau of Animal Industry. The studies on botulism in olives, which will not only save the ripe olive industry of the State but many lives, would cease, as would likewise the manufacture of serum for the prevention of hog cholera, the preparation of vaccine for anthrax, and the various other measures that annually save millions of dollars and prevent great suffering among domestic animals. Even feeding experiments on animals would be impossible.

"No worse attack on the welfare of the State and on the right of the university to seek and teach accurate knowledge and information could be made. Every man, woman and child, every unborn babe, every domestic

animal in the State will be affected if this measure becomes a law. No one will tolerate cruelty to animals. The present laws of the State are drastic and quite sufficient to control any abuse. We know that there is no cruelty to animals in the laboratories of the universities. They are in charge of men and women of the highest character who are unselfishly working to better the lot of their fellow men. Anesthetics are always used for animals in the laboratory in exactly the same way that they are used by surgeons in the operating room.

"California must not go backward. We must be able to give the best care to both men and animals, to study disease, and to protect the industries of the State by further research. We urge upon the citizens of the State the defeat of this initiative."

(Signed)

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA.
THE BOARD OF TRUSTEES OF STANFORD UNIVERSITY.

RESEARCH

There has been a steady growth of the research work in most of the departments of the University. During the year the Committee on Publications has issued several important publications reporting research work done by members of the faculty.

A special Committee on Research has been appointed from the faculty and a small sum of money set aside to be used under the direction of the Committee in the way that will most advance research in the University.

In the long run the measure of the success of the University will depend more upon the quality of the research work done than upon any other factor. With the development of the University Press on a self-sustaining basis it is hoped that through gifts or endowment we may be able to create a contingent or sinking fund that will permit the publication of books written by members of the faculty, or perhaps by others. As indicated in the report of last year a special endowment for this particular purpose would be of a very decided advantage. In fact the international reputation of several of the American universities depends more upon the books that have appeared from their University Presses than upon any other factor.

REPORTS OF RESEARCH IN PROGRESS
1919-20

ANATOMY

A. W. Meyer: Studies upon abortuses and the frequency and cause of abnormalities among guinea pigs.

E. D. Congdon: Observations on the variations of the thoracic sympathetic.

A. W. Warnock: A study of some features of the seminal vesicles in the guinea pig.

APPLIED MATHEMATICS

L. M. Hoskins: Problems in theory of elasticity, with applications to geodynamics.

S. D. Townley: Investigation of certain variable stars observed at Lick Observatory, 1912 to 1919; School finances in the State of California.

H. C. Moreno: Propeller nomograms (using data from the Aerodynamic Laboratory).

W. A. Manning: The primitive groups of class fourteen, and other topics in the theory of groups of permutations; A fundamental theorem concerning simply transitive primitive groups; Multiply transitive groups with a transitive sub-group of lower degree; Simply transitive groups of degree n containing a circular permutation of degree n .

H. W. Brinkmann: The group characteristics of the ternary linear fractional group and of various other groups.

BACTERIOLOGY

W. H. Manwaring and E. H. Eiskamp: A study of antibacterial intestinal defences.

W. H. Manwaring and L. R. Chandler: A study of hepatic regeneration and hypertrophy; An experimental study of the pathology of iron excretion.

C. V. Burke and D. K. Pischel: Studies on the neutralization of botulinus toxin.

E. W. Schultz and L. R. Chandler: The hydrogen-ion concentration of goat's milk; Comparison of the size of fat globules of goat's, cow's and human milk.

E. W. Schultz and Alberta Marx: The relationship between the hydrogen-ion concentration and bacterial counts of cow's milk.

E. W. Schultz and H. J. Beaver: The relationship between the hydrogen-ion concentration and the bacterial counts of cow's milk.

E. W. Schultz and Hans Hartman: Studies on necrosis and cirrhosis of the liver.

E. W. Schultz: Studies on parenchymatous degeneration.

BOTANY

D. H. Campbell: A study of the Gametophyte and embryo of *Botrychium simplex*; The nature of the Stele in Eusporangiate ferns; Further studies on the origin of the Hawaiian flora.

L. R. Abrams: An illustrated flora of the three Pacific States. The first of the three volumes will go to press this fall.

L. L. Burlingame: Variation and mutation in *Lupinus*; The inheritance of flower color in *Lupinus apricus*; Variation and heredity of the Anthocyanin pigments in *Clarkia elegans*; Cytology of *Clarkia elegans* and *Crepis* species (with Miss Frances Ward); Investigations on the Lupine and *Clarkia*.

O. L. Sponsler: Physical properties and structure of starch.

O. L. Sponsler and H. A. Borthwick: Salt requirements of wheat.

L. G. M. Baas-Becking: Development of the Stele in *Botrychium*; The application of Planck's Quanta theory to physiology.

Mrs. R. S. Ferris: An annotated list of the Pteridophytes and Spermatophytes of the Santa Cruz Peninsula.

CHEMISTRY

J. M. Stillman: Theophrastus von Hohenheim, called Paracelsus, dealing with the place of Paracelsus in history and with the chemistry of medicine of his time; The history and development of chemistry from ancient times.

R. E. Swain with N. W. Rakestraw: An investigation of the effects of severe fatigue on the composition of the blood.

R. E. Swain with R. J. Cross: The proteins of wheat, with special reference to their amino acid content. (Under the fellowship grant of the Sperry Flour Company.)

R. E. Swain with Wm. Schaufelberger: The amino acid distribution in whale blood fibrin.

R. E. Swain: An investigation of the methods of operation and of the results on plant and animal life of smelter operation in the Murray and Midvale districts, near Salt Lake City, with the assistance of a resident chemical and botanical staff.

L. R. Lenox with Alice R. Berger: A rapid method for the determination of silicic acid in silicates; The separation of titanitic acid from titaniferous ores.

E. C. Franklin: Metallic derivatives of the alcohols; Ammono carbonic acids and their salts.

E. C. Franklin with F. W. Bergstrom: Ammono salts of tungsten, molybdenum, iron and manganese.

E. C. Franklin with M. W. Garrett: Ammono salts of uranium.

E. C. Franklin with H. B. Reilly: The preparation of carbon tetrafluoride and a study of its properties as an electrolyte.

E. C. Franklin with Marguerite Eiskamp: The preparation of potassium methyl amine and certain metallic salts of ammono acids.

E. C. Franklin with A. R. Albouze: An investigation of lubricating oils.

S. W. Young with Imo P. Baughman: The mutual flocculation of colloids.

S. W. Young with N. P. Moore: The principles of fractional distillation.

S. W. Young with R. M. Heinz: Reactions in fused salts; On sensitive thermostat regulation.

S. W. Young with P. H. Jones: On the cracking of petroleum.

S. W. Young with P. S. Williams: On the passive state of tin.

S. W. Young with C. E. White: The passive state of magnesium.

P. S. Williams, under the direction of R. E. Swain, has carried on throughout the past academic year the chemical work for Dr. H. G. Mehrrens of the Medical School in connection with an extended investigation which he is conducting on the therapeutic value of certain arsenical compounds.

ECONOMICS

Eliot Jones: The trust problem in the United States.

J. B. Canning: The problem of classification in accounting.

EDUCATION

L. M. Terman: The mental development of gifted children.

L. M. Terman with Curtis Merriman: The resemblance of twins in general intelligence.

L. M. Terman with Maud A. Merrill: The "Three R" ability of borderline and feeble-minded children.

L. M. Terman with Gertrude S. Bell: Effects of intensive training on the mentality of a borderline case of mental deficiency.

L. M. Terman with Frederick Borncamp and Kimball Young: Intellectual differences in certain racial groups.

L. M. Terman with J. R. Stockton: The nature of intelligence.

L. M. Terman with Lela O. Gillan and Anna L. Hillesheim: Correlations of certain intelligence tests with class marks of high school and college students.

L. M. Terman with V. L. Cady: Mental test methods applied to the study of character.

L. M. Terman with Ethel D. Whitmire: Intellectual differences among 1400 unselected school children as measured by the National Intelligence Tests.

CIVIL ENGINEERING

Charles Moser: Physical tests of California sands.

ELECTRICAL ENGINEERING

H. J. Ryan: Failure of cap and pin type suspension insulators through temperature cycles.

H. J. Ryan and H. H. Henline: The design characteristics of long suspension insulators (available for the insulation of 220,000 volt lines); The nature of suspension insulator flash-overs due to lightning and kindred phenomena; Break-down of insulating oils and materials immersed therein.

H. J. Ryan, H. J. Rathbun and C. D. Howe: Conductivity of high voltage insulating oils with special reference to Ionic-alignment characteristics.

H. J. Ryan and Takeshi Nishi: Surface creepage and high voltage insulation.

MECHANICAL ENGINEERING

W. F. Durand and E. P. Lesley: A research supported by grant from the National Advisory Committee for Aeronautics, Washington, D. C., being a continuation of previous researches on the same subject in the field of aerodynamics and relating especially to the characteristics of operation of ten model air propellers of selected design; A research supported as for No. 1, and especially relating to the general analysis of the results of several preceding researches relating to the characteristics of operation of air propellers; A research supported as for No. 1 and relating especially to the characteristics of air propellers operating under large angles of yaw, as in the case of helicopter flight, the propeller furnishing by its vertical component the necessary sustentation and by its horizontal component the necessary propulsive force.

G. H. Marx: A series of lectures in New York during the winter and spring relating especially to the subject "The Social Function of the Engineer."

G. H. Marx and L. E. Cutter: A research supported by the Engineering Foundation, and relating especially to an investigation of the wear of gear teeth.

W. R. Eckart: A research relating to the development of satisfactory commercial heat exchange apparatus for the transfer of heat.

D. K. Dungan and H. Stewart: The measures necessary to reduce the effect of priming in evaporators.

A. R. Albouze: The relation between temperature and absolute viscosity of lubricating and other oils, with especial reference to the extent to which the logarithmic law holds true between the temperature range of 70° to 300° F.

ENGLISH

W. H. Carruth: A manual of comparative literature (systematic and historical).

R. M. Alden: A history of the editing of Shakespeare.

J. S. P. Tatlock: Studies in and an edition of Layamon's Brut; The manuscripts and evolution of Chaucer's Canterbury Tales; Other studies in Chaucer; A concordance to the works of Chaucer.

L. E. Bassett: A handbook of public speaking; A modernization of certain of the miracle plays.

W. D. Briggs: An edition of the poems of Ben Jonson; Studies of the life and thought of the sixteenth and seventeenth centuries in England.

H. D. Gray: Studies in the structure of certain of Shakespeare's plays.

S. S. Seward, Jr.: An analysis of the principles of the comical and applications to the literature of comedy.

H. J. Hall: Books read in America during the seventeenth and eighteenth centuries; An edition of the works of the first American born poet, Benjamin Thomson.

Mrs. F. T. Russell: The literature of the Utopian idea.

A. G. Kennedy: A bibliography of works on the English language; A history of English spelling; A concordance of the works of Chaucer.

M. L. McClintock: A textbook of high school debating.

ENTOMOLOGY AND BIONOMICS

R. W. Doane: Studies on the effect of smoke from industrial plants on insects and vegetation; Studies on insects affecting stored food products.

M. Isabel McCracken: Studies on California Hymenoptera; Studies in silkworm bionomics.

G. F. Ferris: Contributions toward a monograph of sucking lice; Coccidæ of Texas.

K. K. Kannan: Function of the prothoracic plates of Bruchid larvæ.

F. R. Cole: Comparative study of the hypopygium of Diptera; Study of Nycteribiidæ.

GEOLOGY

J. P. Smith: On the marine invertebrate Upper Triassic faunas of North America.

Bailey Willis: An investigation upon the structure of the Coast Ranges, bringing up new views and revising old ones, from the standpoint of mechanics of mountain structure; The great magnesite deposits of Washington.

C. F. Tolman, Jr.: A study of the ore deposits of the Foothills Copper Belt of the Sierra Nevada; A study of the geology and oil resources of the Coalinga region, and of the Ventura region.

A. F. Rogers: The forms of silica as they occur in the rocks; Phosphate of lime as a rock-constituent.

F. P. Vickery: A stratigraphic study of the Tesla region, with a general report on its geology.

Ida S. Oldroyd: On the molluscan fauna of Puget Sound.

GERMANIC LANGUAGES

George Hempl has continued his investigations into the Greek speech of the Hittites and Minoans.

K. G. Rendtorff has continued his studies in German literary and cultural history.

W. A. Cooper: The genesis and textual history of the writings of young Goethe.

HISTORY

- E. D. Adams: British-American relations.
A. B. Show: Origins of the German Constitution.
P. J. Treat: Japan-American diplomatic relations.
E. E. Robinson: Party votes in recent Presidential and State elections.
R. H. Lutz: The German Revolutionary Movement of 1918-19.
R. G. Trotter: Origins and achievement of Canadian Federation.
P. A. Martin: Latin America and the War; History of Brazil; Labor and social conditions in Mexico; The causes for the collapse of the Brazilian Empire; A syllabus of Latin-American history and institutions.

LATIN

- H. R. Fairclough (with A. T. Murray): An edition of Theocritus; Certain archaeological studies; A History of the City of Rome; Some investigations based on the Corpus of Latin inscriptions.
B. O. Foster is editing and translating Livy for the Loeb Classical Library.
Jefferson Elmore (with O. M. Johnston): A new French grammar; The reorganization of the Roman and Italian census by Julius Cæsar and of certain other problems relating to Roman municipal institutions; A brief history of Roman civilization.

LAW

- C. A. Huston: Sources of the American common law.
A. M. Cathcart: Special investigation in connection with procedure in the code states.
J. W. Bingham: Investigation into the law of future interests in California.
C. B. Whittier: Investigation into the current administration of justice with particular reference to possibilities of procedural reform.
C. G. Vernier: Special investigations in legal aspects of criminology in connection with his editorial work for the American Journal of Criminology.
M. R. Kirkwood: Preparation of material for a case book upon landlord and tenant.
W. B. Owens: Preparation of material for a case book on commercial law.

MATHEMATICS

- H. F. Blichfeldt: An exposition of a certain phase of the Theory of Numbers.

MINING AND METALLURGY

- T. J. Hoover with H. V. Dodd and A. J. Mason: Oil emulsions in the petroleum industry (funds provided by a group of oil companies).

T. J. Hoover with J. A. Potter: Charcoal fuel for pig-iron production on the Pacific Coast.

MEDICAL SCHOOL

Division of Medicine

Dr. A. W. Hewlett: Blood sugar curves.

Drs. A. W. Hewlett and W. E. Glaeser: Effect of drugs on temperatures of tuberculous patients.

Metabolism Laboratory:

Dr. F. W. Kroll: The effect of salt and water on the blood pressure of patients with hypertension.

Dr. Maude N. Haven and Dr. Thomas Addis: The effect of change of position and of exercise on the blood pressure and pulse rate of patients with hypertension.

Dr. K. I. Watanabe: Changes in the fat content and of the acid-base equilibrium of the blood in rabbits in which tetany has been induced by guanidine.

Dr. Thomas Addis: The ratio between the urea content of the blood and of the urine at high levels of blood urea concentration.

Neurology:

Dr. W. F. Schaller: Neuro-pathological work on brain and cord tumors.

Dr. H. G. Mehrtens: Clinical results following rectal administration of arsphenamine; An estimation of the pathological damage achieved in cases of naturally arrested tabes and in tabes arrested following treatment.

Pediatrics:

Dr. H. K. Faber: A study of the food requirements of infants during the first twelve days of life together with a study of other closely related problems of the nutrition of the new born; and a study of the reaction of the stools of infants as related to diet and intestinal flora.

Dermatology:

Dr. H. E. Alderson: Improvement of methods in the treatment of dermatoses; The etiology of various skin diseases; The treatment of poison oak dermatitis and producing an apparent immunity against the same.

Experimental Laboratory:

Richard Shevsky: Study of the pharmacology of the botulism toxin.

Miss Harriet King: Thermal death point of spores of bacillus botulinus.

Miss Lois K. Park: Immunological characteristics of different strains of bacillus botulinus.

Division of Surgery

Dr. Leo Eloesser and Dr. J. M. Read: Absorption of lead in joints; Researches on gangrene; One-armed in industry; Endotheliomas of nose (ready for printer).

Drs. J. F. Cowan and F. E. Blaisdell: A study of the healing in green-stick fractures in kittens.

Dr. F. E. Blaisdell: A pathological embryo of 3 mm. in length; A contribution to teratology. (The study includes a wax reconstruction.) A study of the structure and development of the parametrium in a series of fetuses of different ages, and in the adult man. (This study calls for the making of series of hundreds of slides, which will also serve for a series of papers on different subjects relating to the structure of the pelvic floor, development of the uterine ligaments besides micrometrical studies.)

Dr. L. W. Ely: Experimental study on the healing of fractures.

Division of Obstetrics

Dr. L. A. Emge: A study on mitrochondrial granules in the kidney and a similar study on such granules in the human amnion.

Dr. C. B. Moore: Infections of the female urethra (in print).

Drs. A. B. Spalding and L. A. Emge: Clinical papers presented before the meeting of the California State Medical Society.

Division of Pathology

Dr. William Ophüls: Congenital hydrocephalus.

Dr. J. R. Oliver: Bronchial asthma (an anatomical and experimental study).

The following theses were started before September, 1920, but are not yet completed:

Division of Medicine

L. W. Ellis: Blood sugar.

W. F. Pritchard: Actinomycotic pyemia in man.

Metabolism Laboratory:

J. A. Sampson: The rate of excretion of phenolsulphonephthalein in normal adults and the effect thereon of variations in the volume of urine, and the effect of urea administration. The effect of changes in urine volume in rabbits.

J. A. Azevedo: The rate of excretion of phenolsulphonephthalein in rabbits, the effect of adrenalin and of urea thereon.

Daniel Coll: The effect of pituitrin on the rate of excretion of phenolsulphonephthalein in rabbits.

Joseph Goldstein: The effect of pituitrin on the rate of excretion of phenolsulphonephthalein in rabbits.

B. A. Meyers: The effect of thyrotoxin on the ratio between the urea content of the urine and of the blood and on the rate of excretion of phenolsulphonephthalein in rabbits.

Hyman Miller: The effect of various diets and drugs on the capacity for excretion of urea of normal adults and of patients with Bright's Disease.

Mr. Kolos: The effect on the coagulation time of oxalated human plasma of various tissue extracts, and the effect of such extracts on the time of bleeding from wounds.

Neurology:

Miss H. E. Twombly: Neurasthenic states and their dependence upon pathological processes.

Miss Lucile Williamson: Muscular strength in diseases of the central nervous system as tested by the Martin Muscle Test.

Mr. E. B. Newton: Quantitative estimation in blood and urine following rectal administration of arsphenamine.

Skin Clinic:

Mrs. R. Shephardson: Provocative Wassermann.

H. C. Coe: Investigating all syphilitic patients, particularly patients with regard to the Wassermann fast cases.

W. Crane: Treatment of dermatitis venenata by the injection of an extract of the poison oak plant.

Pediatrics:

Randolph Flood: Infant blood sugar curves and their analysis.

Division of Pathology

S. S. Yamada: Toxic jaundice following intensive arsphenamine treatment.

S. v. Christerson: Regeneration of mitochondria in the kidney.

Division of Surgery

Leonard Woods: A perineal suprapubic extraurethral prostatectomy (devised by Dr. Rigdon).

PHILOSOPHY

H. W. Stuart: A study of the ethical doctrines and principles of contemporary philosophical "realism."

H. C. Brown: A survey of the characteristic results of modern science which are of fundamental importance for a discussion of the distinctive problems of philosophy.

PHYSICS

Fernando Sanford: Experiments on the decimal variation of the earth's charge, to test Sanford's theory of electrostatic induction from the sun.

D. L. Webster: Measurements of the general X-Ray spectrum and its dependence on potential and direction.

F. J. Rogers: Measurements of the dielectric constant of silk.

P. A. Ross: Test for a change of emission frequency of helium in a field of acceleration. Critical potentials of X-Rays of the M series. This is to test the application of the quantum theory to the M series and to

determine which of the stable positions for electrons in the atom are concerned in the production of this series.

G. R. Harrison: Contact electrification of metals and liquids.

F. C. Hoyt: Critical potentials of the fainter lines of the L series.

C. F. Richter: Rebound of cathode rays from metals. Measurements to determine the laws of such rebounds and especially to find whether the quantum theory can be applied to such effects.

PHYSIOLOGY

E. G. Martin: The control of mating in the honey-bee; Fatigue and working capacity, as affected by various conditions of labor; The relation of tobacco use to industrial efficiency; Vaso-motor reflexes in man; Salt antagonism in the brine shrimp.

E. G. Martin and J. P. Baumberger: The investigation of the nicotine content of the various brands of tobacco smoke.

F. W. Weymouth: Growth in the Pismo clam with the physical and physiological features affecting it.

J. R. Slonaker: Effect of reduced diet on reproduction and young in the albino rat.

G. D. Shafer: Growth and moulting in the larval stages of dragon flies.

J. P. Baumberger and Mr. Olmstead: Growth and moulting in Grapsoid crabs.

J. P. Baumberger: Tolerance in the glass bottle trade in relation to Weber's law, and visual judgment of size.

Richard Shevky: Physiological manifestations in botulism.

POLITICAL SCIENCE

V. J. West: Duplication in Federal Departments.

E. A. Cottrell: Municipal budget procedure.

F. M. Russell: International administration.

Miss Eleanor Parsons: State Civil Service laws.

PSYCHOLOGY

F. Angell: Horizon illusions of constellations; Perception of weight.

J. E. Coover: Subliminal mental processes; Factors in typewriting.

Miss G. M. Trace: Absolute pitch; Photisms.

ROMANIC LANGUAGES

O. M. Johnston is preparing, in collaboration with J. Reinhold of Cracow, a critical edition of the old French poem on *Floire et Blancheflor*.

C. G. Allen is preparing for publication a collection of Spanish dramas of the late 16th century, Ms. No. 14864 of the Biblioteca Nacional at Madrid.

A. M. Espinosa: A study of the folklore material in northern Spain.

S. A. Smith: A critical study of the theater of Giuseppe Giacosa.

Alfred Coester: A literary history of Spanish America, Spanish edition; Intellectual Argentina.

Frederick Anderson: A vindication of nature; The barbarian creed; The literature of Western Europe.

W. L. Schwartz: The influence of the Far East on modern French literature and art; A study of French concessive clauses introduced by *tout*.

HOPKINS MARINE STATION

W. K. Fisher: The structure and classification of the Asteroidea of the North Pacific Ocean.

F. W. Weymouth: The life history of California edible mollusks.

Gertrude Van Wagenen: An investigation of the structure, classification, and ecology of Californian sea anemones and corals.

W. F. Thompson: Life history of the sardine and albacore.

W. S. Wallace: The hydroids of Monterey Bay.

ZOOLOGY

J. O. Snyder: General investigation—Geographic distribution and natural history of western fresh water fishes—coordination of same with recent geology; Special—(1) Fishes of the Bonneville drainage and upper Columbia River; (2) Habits and distribution of salmon and trout in California; (3) Fishes of the Klamath River system; (4) Fishes in the streams west slope of Sierra Nevada Mountains.

E. C. Starks: A comparison of our mackerel with its Atlantic Coast representative; On the osteology of the fishes of the families Uranoscopidae, Dactyloscopidae, and Septoscopidae.

COMPTROLLER

The rearrangement of the business affairs of the University brought about a marked improvement in the conduct of university affairs and also resulted in economies in a number of different directions. With the office of the Comptroller immediately associated with that of the President, Registrar, and the various other administrative officers there has been a great simplification in the business of the University. The removal of the business office to the University has been similarly beneficial.

Mr. Roth, the Comptroller, during the period of his occupancy of the office, has reorganized the Corporation Yard, eliminated a number of undesirable buildings, improved the grounds, and made marked economies in heat, janitor service and in other directions. The direct association of the office of the Comptroller with that of the President has brought

about a needed coordination between the academic and the business sides of the University.

ALUMNI SECRETARY

With the increase in the number of alumni and with the desire to interest our former students and alumni in the activities of the University, Mr. J. E. McDowell as Alumni Secretary has been relieved of various other duties and is devoting his time in this particular field. During the year material has been gathered for the publication of a directory of Stanford graduates and former students. This is in line with the plan which was adopted of issuing a directory at least every ten years.

DEAN OF MEN

During the year Mr. George B. Culver, a Stanford graduate with the class of 1897, was appointed Dean of Men.

FACULTY

Absences.—Sabbatical leaves for the academic year 1920-21 have been granted to the following: Professor Wilfred Hamilton Manwaring, of the Department of Bacteriology and Experimental Pathology; Associate Professor Jesse Brundage Sears, of the Department of Education; Professor Victor J. West, of the Department of Political Science.

During the academic year 1919-20 the following members of the faculty were on leave: Professor Vernon Lyman Kellogg, of the Department of Entomology, was engaged in important work in the Educational Division of the National Research Council; Professor Ephraim Douglass Adams, of the Department of History, collected material in Europe for the Hoover War Library; Professor Henry Rushton Fairclough, of the Department of Latin, continued his work with the American Red Cross in Montenegro; Mr. George Thomas Clark, Librarian, went to Europe to arrange for the purchase of books for the University Library.

Leaves of absence have been granted to the following for the academic year 1920-21: Miss Marjery Bailey, Instructor in English, for study at Yale University; Miss Elisabeth Lee

Buckingham, Instructor in English, for study at Columbia; Assistant Professor Yamato Ichihashi, of the Department of History, for travel in Europe.

Resignations.—The following resignations have been received and accepted: Professor Vernon Lyman Kellogg, of the Department of Entomology; Assistant Professor Clarence Earl Blee, of the Department of Civil Engineering; Assistant Professor Gardner C. Bassett, of the Department of Psychology; Mr. John Ezra McDowell, Dean of Men; Instructors Charles Victor Burke, of the Department of Bacteriology and Experimental Pathology; William Edmund Burke, of the Department of Chemistry; Warren Paul Staniford, of the Department of English (Journalism); Arthur Louis Acker, of the Department of Physical Education for Men; John Armstrong Sellards and Louis Peter DeVries, of the Department of Romanic Languages.

Promotions.—The following promotions take effect with the beginning of the academic year 1920-21: Associate Professors John Pearce Mitchell, in Chemistry; Eliot Jones, in Economics, to full professorships; Assistant Professors Bruno Boezinger, in German; Walter Kenrick Fisher, Jr., in Zoology, to the rank of associate professor; Instructors Edwin William Schultz, in Bacteriology and Experimental Pathology; Henry Harrison Henline, in Electrical Engineering; Arthur Garfield Kennedy, in English; Ludwig Augustus Emge, in Obstetrics and Gynecology, to the rank of assistant professor; Teaching Assistant Gertrude May Trace, in Psychology, to the rank of instructor.

New Appointments.—The following appointments take effect with the beginning of the academic year 1920-21: Mr. Walter Greenwood Beach, as Professor of Social Science; Dr. Truman L. Kelley, as acting Professor of Education; Dr. David Locke Webster, as Professor of Physics; Dr. Ralph Haswell Lutz, Associate Professor of History; Mr. William Brownlee Owens, Associate Professor of Law; Dr. W. Edward Chamberlain, Assistant Professor of Medicine (Radiology); Dr. William Ludlow Holman, acting Assistant Professor of Bacteriology and Experimental Pathology; Mr. Frank M. Russell, acting Assistant Professor of Political Science; Dr.

Arthur Gibson Vestal, acting Assistant Professor of Biology; Mr. Earl Charles Thomas, Assistant Professor of Civil Engineering. The following instructors have been appointed: Heinrich Wilhelm Brinkmann, in Applied Mathematics; L. G. M. Baas Becking, in Botany; Florian A. Cajori, John Frederick Gross Hicks, George Sutton Parks, in Chemistry; Emil Grebs, in Education, Division of Graphic Art, for the autumn and winter quarters; Paul Hibbert Clyde, Gordon Arthur Davis, A. Donald Douglas, in English; Catherine Morris Cox, in German; Charles Selwyn Botsford, Walter D. Powell, Wellford Duffy Seay, in Physical Education, Encina Gymnasium; Lois M. Kendall, in Physical Education, Roble Gymnasium; Maud Amanda Merrill, in Psychology; Frederick Anderson, William Leonard Schwartz, in Romanic Languages. The following have been detailed by the War Department as Assistant Professors of Military Science and Tactics: Lieutenants Wilson G. Bingham, Charles E. Boyle, Harold A. Cooney.

Summer Quarter Appointments.—The following were appointed for the summer quarter, 1920: Professor Tom Peete Cross, of the University of Chicago, as acting Professor of English; Professor Frank Alfred Golder, of the State College of Washington, as acting Professor of History; Professor Duane Reed Stuart, of Princeton University, as acting Professor of Latin; Professor James Wilford Garner, of the University of Illinois, as acting Professor of Political Science; Professor Pierre Joseph Frein, of the University of Washington, as acting Professor of French; Dr. Charles Clifford Macklin, of Johns Hopkins University, as acting Associate Professor of Anatomy; Dr. Stephen Taber, of the University of South Carolina, as acting Associate Professor of Geology; Mr. William Brownlee Owens, as acting Associate Professor of Law; Dr. Edward Scribner Ames, of the University of Chicago, as acting Associate Professor of Philosophy; Professor Felipe Morales de Setién, of the University of Southern California, as acting Assistant Professor of Romanic Languages. The following were appointed as instructors: Dr. John Frederick Gross Hicks, of Oregon Agricultural College, Mr. Charles Kirkton McWilliams, in Chemistry; Mr. Rudolph

Schaeffer, in Education, Division of Graphic Art; Mr. Walter H. Nichols, Principal of Palo Alto (Cal.) Union High School, Mr. Arthur Sinton Otis, Dr. J. Harold Williams, of Whittier State School, in Education; Dr. James M. D. Olmsted, of the University of Illinois, in Physiology; Mr. Raymond Holder Wheeler, of the University of Oregon, in Psychology. The following lecturers were appointed: Mrs. Georgina Spooner Burke, in Bacteriology; Mr. Will C. Wood, State Superintendent of Public Instruction, California, in Education; Mr. Irving Pichel, of New York City, in Dramatic Art.

Deaths.—The University community has been saddened by the loss of the following members of its staff: Dr. Ernest Oertly, Instructor in Chemistry, January 5, 1920; Mr. Arnold Keller, Jr., Instructor in Electrical Engineering, June 20, 1920.

MEMBERSHIP AND RANK ON ACADEMIC STAFF

At its meeting April 23, 1920, the Academic Council passed the following resolutions:

TRAINING SCHOOL FOR NURSES

That regular salaried instructors in the Training School for Nurses, which is in connection with the Medical Department, be placed on the Academic Staff of the University.

LIBRARY STAFF

That members of the Library Staff be given classification and such status on the Academic Staff as their salaries may justify.

STUDENTS

ATTENDANCE

The total enrolment for the year was 2949, including summer registration, 682 more than in 1918-19. By major departments these were distributed as follows:

Anatomy	2
Bacteriology and Experimental Pathology.....	29
Botany	29
Chemistry	276
Economics	635
Education—	} 185
—Graphic Art	
Engineering—Civil	105
—Electrical	7
—Mechanical	277
English	249
Entomology and Bionomics.....	14
Geology	212
Germanic Languages.....	10
Greek	6
History	158
Latin	20
Law—Professional }	} 236
—Pre-Legal	
Mathematics	39
Medicine	125
Mining and Metallurgy.....	17
Philosophy	17
Physics	10
Physiology	98
Political Science.....	31
Pre-Clinical	6
Pre-Nursing	6
Psychology	19
Romanic Languages—French..... }	} 124
—Spanish	
Zoology	46
Total.....	*2988

*Of this total, 39 were also registered as majors in other departments.

STUDENT CONDUCT AND CONTROL

There has been a steady improvement in the ideals of the Stanford student body and an evident sense of increasing

responsibility for the maintenance of the good name of the University. A new form of student control, in which the Committee on Student Affairs acts as a legislative body and the disciplinary function is carried on by the Students' Council reporting directly to the President, has worked well. There has been a marked reduction in the abuse of underclassmen and I think that we are justified in the hope that hazing will disappear from the Stanford student body and that we will have one of the most wholesome student sentiments in the United States. The students are grasping the fact that they must be a closely knit and compact group in all of their responsibilities, particularly in their representation of the University in the forum and on the athletic field.

MARKING SYSTEM

A change was made, taking effect at the end of the spring quarter, in the regulations dealing with unsatisfactory scholarship records in the University. The main point of the change lies in the attempt to take into account in determining probation, failure, and disqualification, the grade of scholarship as well as the number of units of deficient work. The grade point system makes such a procedure a comparatively easy one. In changing over to the new plan, it was found possible to specify in more definite terms the extent of deficiency which would result in the various forms of scholarship discipline, thus making it possible for the student himself to ascertain his own scholarship status, and so diminish largely the seeming arbitrariness of Committee action. No system can be quite automatic in its operation, but the new plan attempts as near an approach to this as shall be found feasible. The normal registration for a quarter is 15 units, and the scholarship standing assumed by the Committee is an average C grade, or 15 grade points for the quarter. Units and points added together give 30 "counts," which thus becomes standard work for the quarter. The maximum number of counts which can be made in a given quarter on a registration of 15 units is 60. The student who fails to obtain 22 is placed on probation; who does not obtain 17 (or 12 during the first two quarters) is considered as "failed;" who does not make 12

counts (7 during the first two quarters) is disqualified and not permitted to reregister in the University. The particular lines drawn may need to be changed as the result of experience, but the definiteness of the plan can be retained. Illness and special considerations will still continue to modify Committee actions in special cases.

LIMITATION OF STUDENTS

The limitation of five hundred placed by Mrs. Stanford upon the number of women who could attend the University at any one time and the recent limitations of various departments, together with the four hundred and fifty limit placed upon new students with less than a year and a half of college standing, all present a series of problems, from which we are gaining experience without feeling in any way satisfied as to the results at present obtained. The registration resulting from the various limitations has up until the period just following the war, when there was an increase due to the return of many soldiers, resulted in a student body, in actual attendance at any one time, of something over two thousand.

The admission of women offers a special problem not met as far as I know by any other university in the country. Some years ago women with advanced standing were given a priority, but this was changed a few years ago so that women now come to Stanford either upon the Preferred List or the Numbered List. The number of women applying for admission in October, 1920, with full credentials was 532. The number of vacancies was approximately 110. Practically all of the vacancies could have been filled from women who were eligible upon the Preferred List. Consequently, since the Numbered List could not be disregarded under the rules, one-half were chosen from the Numbered List and one-half from the Preferred List. The last of the applicants received on the Numbered List applied in 1916 for admission to Stanford. It is apparent therefore that our selection as far as the Numbered List is concerned has broken down, since we obtain thereby only those who apply four years in advance, even before they enter the high school.

There are numerous objections to our present plan and there is a constant feeling on the one hand that the University should favor one applicant or another, and on the other that applicants are favored. It is quite clear that there will have to be some review of our existing method of choice since the number of women applying for entrance in January, 1921, is approximately 200; for October, 1921, 650; for October, 1922, 400; for October, 1923, 260; for October, 1924, 175. The Committee on Admission is making a study of this particular problem and we anticipate further recommendations and perhaps the adoption of some new plan.

The situation regarding the admission of men is gradually approaching a similar position to that now in existence for the women. In October, 1920, while 450 applicants were possible, 575 applied and submitted credentials, while probably 100 were discouraged from filing applications by the improbability of their admission.

No wiser policy has been adopted by Stanford University than that of the limitation of the student body to a size consistent with the income of the University and the facilities of the existing plant. Further experience and study will be required both in the case of men and women in order that we may have a qualitative choice and obtain the most satisfactory and promising student body. Since Stanford can only cover a limited field, there is every reason why we should favor those most capable of taking full advantage of everything that we have to offer. One of the prime difficulties in any plan of limitation is the desirability of admitting the children of former Stanford students, since in that way an *esprit de corps* of an unusual character can be developed. Family influence and family association with the older universities and colleges in the east has been of inestimable benefit to those institutions.

DEPARTMENTAL CHANGE

With the resignation of Professor Vernon Lyman Kellogg, the Department of Entomology and Bionomics was united with that of Zoology at the beginning of the academic year 1920-21.

GIFTS

The University is in receipt of a number of valuable gifts and donations, a list of which is given under a separate heading. Grateful acknowledgment is here made to the several donors.

The department and other special reports follow.

Respectfully submitted,

RAY LYMAN WILBUR,
President.

December 31, 1920.

REPORT OF THE TREASURER OF STANFORD UNIVERSITY
FOR THE FISCAL YEAR ENDING AUGUST 31, 1920.

TO THE HONORABLE BOARD OF TRUSTEES
OF STANFORD UNIVERSITY:

The details of the accompanying report of your Treasurer for the fiscal year ending August 31, 1920, are self explanatory and reflect the sound condition of the Trust.

It covers, in part, a transitional period in the financial management of the University.

The original Stanford Trust consisted largely of railway bonds of long maturity purchased in a low interest bearing period, certain large ranches in California, and a one-quarter interest in the Pacific Improvement Company.

In order to further the purposes of the Trust and to meet the expanding needs of the University, the Vina and Durham Ranches have been sold and our income increased by the investment in bonds of the proceeds, together with those of liquidating dividends of the Pacific Improvement Company.

Without this augmented income we would have had difficulty in carrying the University through the trying war period, with its problems and increasing scale of expenses. A study is being constantly made of our investments in the endeavor to still further increase their yield.

A number of special funds have been added to the original endowment through such gifts as those of the Lane Medical Library, the Free Bed Account at the Stanford Hospitals, gifts for scholarships, etc. In each case these funds have been treated as a special trust. The increase of such funds is most desirable and should be encouraged, but in order to derive the full benefit from them it is often necessary to also use income from general funds. The greatest need of the University is for additions to its endowment for general purposes.

This report should not be closed without expressing both appreciation of the gifts that have come to the University since its foundation, and the hope that in the years to come Stanford may have that financial support that has been the source of inspiration and growth to other privately endowed universities of the United States.

TIMOTHY HOPKINS,
Treasurer.

January 3, 1921.

TREASURER'S FINANCIAL TABLES

INDEX TO TREASURER'S FINANCIAL TABLES

	SCHEDULE
Assets—Investment	3
Balance Sheet—General	1
Balance Sheet—Current, Investment, Educational Plant.....	2
Bonds and Securities—Acquisitions and Disposals of.....	5
Bonds—Detail Schedule of	7
Building Fund Loan—Analysis of.....	9
Corporate Stocks—Schedule of	8
Dividends	8
Investments—Securities—Summary of	6
Investment—Lands, Buildings, and Equipment.....	4
Lands, Buildings, and Equipment.....	4
Loans—Unsecured	6
Loans—Building Fund	9
Securities—Bonds	7
Stocks—Corporate	8

(See Comptroller's Report for Additional Tables.)

TREASURER'S FINANCIAL TABLES

GENERAL BALANCE SHEET AS AT AUGUST 31, 1920.
SCHEDULE 1—GENERAL BALANCE SHEET

DESCRIPTION	THIS YEAR	
	Detail	Total
ASSETS		
Cash Assets:		
Current Funds.....	84,516.65	
Investment Funds.....	74,483.44	159,000.09
Accounts Receivable Assets:		
Accounts Receivable.....	51,188.44	
Rents Receivable.....	1,294.50	
Interest Accrued.....	269,907.95	
Bonds—Pension Fund (Schedule 12 and 7).....		328,390.89
Employer's Liability Insurance Fund (Schedule 12 and 7).....		49,750.00
Securities (Schedule 3 and 6).....		44,638.08
Contracts of Sale.....		21,556,065.64
Lands, Buildings and Equipment:		941,736.89
Investment (Schedule 3 and 4).....	1,173,056.69	
Educational Plant (Schedule 2 and 22).....	8,259,144.54	
Income Section Educational Plant.....	1,340,726.91	
Other Assets:		10,772,928.14
Liberty Bonds, Employees.....	211.72	
Bonds as Deposits.....	400.00	
Investment (Schedule 3).....	138,757.56	
Working Assets.....		139,369.28
Deferred Charges to Operations (Schedule 12).....		149,381.56
		17,535.52
Total Assets.....		34,158,796.09

SCHEDULE 1—GENERAL BALANCE SHEET—Concluded

GENERAL BALANCE SHEET AS AT AUGUST 31, 1920—Concluded.

DESCRIPTION	THIS YEAR	
	Detail	Total
LIABILITIES		
Immediate Demands for Cash (Schedule 15).....		81,328.44
Other Liabilities:		
Unappropriated Income.....	27,169.86	
Hospital and Special Funds.....	3,241.50	
Loan and Relief Funds.....	30,411.36	
(Schedule 25)		
Unclaimed Deposits.....	4,154.21	
(Schedule 26)		
Deferred and Contingent.....	2,989.61	
	18,128.99	55,684.17
Total Liabilities		137,012.61
RESERVES		
Reserve for Deferred Charges to Operations.....	17,535.52	
Other Reserves.....	144,318.76	
		161,854.28
ENDOWMENTS		
Unrestricted Endowments.....	21,297,207.91	
(Schedule 23)		
Restricted Endowments.....	813,724.20	
(Schedule 23)		
Capital Increase Since Endowment.....	3,489,852.55	
(Schedule 24)		
Endowments Expended on Educational Plant.....	4,170,921.70	
(Schedule 23)		
		29,771,706.36
SURPLUS		
Surplus Income Expended on Educational Plant.....	4,088,222.84	
		4,088,222.84
Total		34,158,796.09

SCHEDULE 2—BALANCE SHEET

BALANCE SHEET AS AT AUGUST 31, 1920.

CURRENT			
ASSETS (Schedule 14)	Total	LIABILITIES (Schedule 15)	Total
Cash on Hand and in Bank.....	84,516.65	Immediate Demands for Cash.....	81,328.44
Accounts Receivable.....	328,390.89	Due to Investment Funds.....	375,957.53
Other Assets.....	94,999.80	Other Liabilities.....	55,684.17
Working Assets.....	149,381.56	Reserves.....	161,854.28
Deferred Charges to Operation.....	17,535.52	Current Surplus:	
		Cash in Excess of Immediate	
		Demands for Cash.....	3,188.21
		Accounts Receivable in Excess of Due to	
		Investment Funds and Other Liabilities.....	141,130.55
		Less: Reserve other than that for deferred	
		charges.....	144,318.76
Total.....	674,824.42	Total.....	674,824.42

INVESTMENT			
ASSETS (Schedule 3)	Total	ENDOWMENTS	Total
Securities (Schedule 6).....	21,556,065.64	Unrestricted Endowments (Schedule 23).....	21,297,207.91
Lands, Buildings, and Equipment (Schedule 4).....	1,173,056.69	Restricted Endowments (Schedule 23).....	813,724.20
Contracts of Sale.....	941,736.89	Capital Increase Since Endowment (Schedule 24).....	3,489,852.55
Due from Current Funds.....	375,957.53		
Cash in Banks.....	74,483.44		
Other Assets.....	138,757.56		
Income Section—Educational Plant.....	1,340,726.91		
Total.....	25,600,784.66	Total.....	25,600,784.66

SCHEDULE 2—BALANCE SHEET—Concluded

BALANCE SHEET AS AT AUGUST 31, 1920—Concluded.

EDUCATIONAL PLANT

ASSETS	Total	ENDOWMENTS AND SURPLUS INCOME EXPENDED	Total
Land.....	18,633.66		4,170,921.70
Buildings and Structures.....	6,764,662.36	Endowment Expended on Educ. Plant (Schedule 23)	4,088,222.84
Improvements.....	540,196.34	Surplus Income Expended on Educational Plant.....	
Equipment.....	1,749,820.83		
Unsegregated.....	1,433,104.37		
Total.....	10,506,417.56		
Less: Educational Plant Assets Transferred to Investment Section.....	2,247,273.02		
Total (Schedule 22).....	8,259,144.54	Total.....	8,259,144.54

SCHEDULE 3—ANALYSIS OF INVESTMENT ASSETS—Concluded
ANALYSIS OF INVESTMENT ASSETS AS AT AUGUST 31, 1920—Concluded.

DESCRIPTION	THIS YEAR	
	Detail	Total
Lands, Buildings and Equipment—Unrestricted		
Real Estate and Improvements.....		1,168,650.71
Lands, Buildings, and Equipment—Restricted		
Real Estate and Improvements: Lane Medical Library Lands.....		1,168,650.71
		4,405.98
Total Restricted.....		4,405.98
Total Lands, Buildings, and Equipment (Schedule 4).....		1,173,056.69
Contracts of Sale		
Due from Current Funds.....		941,736.89
CASH IN BANK—UNRESTRICTED		375,957.53
Cash in Bank—Commercial:		
Union Trust Company—Special Account.....		74,240.14
CASH IN BANK—RESTRICTED		
Cash in Bank—Savings:		
Union Trust Bank—Nurses Home Fund.....		74,240.14
Total Unrestricted.....		74,240.14
Total Restricted.....		243.30
Total Cash in Bank.....		243.30
Total Cash in Bank.....		74,483.44
Other Assets:		
Bond Premium and Discount—General.....	133,982.42	
Bond Premium and Discount—Medical Library Fund.....	2,017.36	
Jewels.....	6,792.50	
		138,757.56
Total Other Assets.....		138,757.56

SCHEDULE 4—LANDS, BUILDINGS, AND EQUIPMENT
LANDS, BUILDINGS, AND EQUIPMENT—INVESTMENT REAL ESTATE AND IMPROVEMENTS FOR YEAR ENDED
AUGUST 31, 1920.

UNRESTRICTED			
CITY PROPERTY:			
San Francisco			
Buckley Property, 1228-1232 Market St.....	79,838.30		
University Club Lot, Powell and California St	15,000.00		
University Club Building and Improvements, Powell and California Sts.....	140,818.44		235,656.74
Alameda			
Llewellyn Tract, 2 Blocks on Marsh.....	• 1,500.00		
Versailles Tract			
Block D.....	Estimated Values		
E.....	4,351.00		
F.....	7,465.50		
G.....	3,555.00		
H.....	2,844.00		
I.....	711.00		
J.....	711.00		
K.....	355.50		
	1,422.00	21,415.00	22,915.00
Oakland			
C. Annette Buckel Building and Lot at 952 14th St.....			3,000.00
Total City Property.....			261,571.74

SCHEDULE 4—LANDS, BUILDINGS, AND EQUIPMENT—Concluded
LANDS, BUILDINGS, AND EQUIPMENT—INVESTMENT REAL ESTATE AND IMPROVEMENTS FOR YEAR ENDED
AUGUST 31, 1920—Concluded.

UNRESTRICTED			
COUNTRY PROPERTY:			
Marin County			
Undivided $\frac{1}{4}$ interest in Shafter Ranch.....		25,559.52	
Colusa, Glenn and Madera Counties			
Pacific Improvement Company $\frac{5}{8}$ 28ths Tract.....		1,780.00	
Santa Clara & San Mateo Counties			
Adjacent to Palo Alto Farm			
Spring Valley Searsville Lake 220.62 Acres.....		48,290.75	
Folger Tract Searsville Lake 5.38 Acres.....		2,624.60	
Water Development—Searsville, etc.....		13,175.45	
Nash Field.....		3,470.00	
Lots 76 and 77, Strip between County Road and S. P. Company Tracks.....		4,201.95	
$\frac{1}{4}$ of Lot 89 P. A. Farm.....		1,250.00	
Coon Tract.....		50,000.00	
Felt Tract.....		75,000.00	
Seale Tract, Lots 39 and 40.....		33,519.50	
Felt Reservoir.....		3,402.99	
P. A. Farm and Improvements Less \$200,000 valuation on Campus.....		644,804.21	
Total Country Property.....			907,078.97
Total Unrestricted.....			1,168,650.71
RESTRICTED			
Lane Medical Library Funds:			
Folsom Street Lot—San Francisco.....			4,405.98
Total Lands, Buildings, and Equipment—Investment Section (Schedule 1-2-3).....			1,173,056.69

SCHEDULE 5—BONDS AND SECURITIES

BONDS AND SECURITIES—ACQUISITIONS, SALES, AND DISPOSAL OF BONDS AND SECURITIES DURING THE YEAR.
ENDED AUGUST 31, 1920.

	Par Value	Purchase Price	Premium or Discount
ACQUISITIONS			
GENERAL FUNDS			
Anglo French 5's, 1920.....	300,000.00	291,991.38	8,008.62
American Telephone & Telegraph Co. 6% Notes, 1922.....	100,000.00	99,250.44	749.56
United Kingdom of Great Britain and Ireland 10-year Convertible 5½ Bonds 1929.....	100,000.00	96,270.50	3,729.50
French Cities 6% Gold Bonds, Lyons 1934.....	35,000.00	32,375.00	2,625.00
French Cities 6% Gold Bonds, Marseilles 1934.....	35,000.00	32,375.00	2,625.00
French Cities 6% Gold Bonds, Bordeaux 1934.....	30,000.00	27,750.00	2,250.00
Swedish Government 20-year 6's, 1939.....	50,000.00	48,890.42	1,109.58
City of Toronto, Ontario, 5½'s 1925.....	25,000.00	24,105.00	895.00
City of Toronto, Ontario, 5½'s 1926.....	25,000.00	23,980.00	1,020.00
Province of Ontario 5½'s 1922.....	50,000.00	49,150.00	850.00
Province of New Brunswick, Canada, 5½'s 1929.....	50,000.00	47,250.00	2,750.00
Los Angeles Gas & Electric Corp. 5's 1939.....	25,000.00	23,122.50	1,877.50
San Joaquin Light & Power Corp. 6's 1950.....	50,000.00	49,250.00	750.00
Los Angeles Gas & Electric Corp. 5's 1939.....	25,000.00	23,125.00	1,875.00
Southern California Telephone Co. First and Ref. 5's 1947.....	50,000.00	42,000.00	8,000.00
Spring Valley Co. 6's Notes 1923.....	237,000.00	237,000.00	10,937.50
Pacific Gas & Electric Co. 5 yr., 7% Coll. Tr. Conv. Gold Bonds 1925.....	350,000.00	339,062.50	
Granville Electric & Gas Co. Cons. Mtg. 5's 1933.....	3,000.00	3,000.00	269.53
Miller & Lux First Mtg. 10 yr. Gold 7's 1930.....	60,000.00	59,730.47	
Miller & Lux First Mtg. 10 yr. Gold 7's 1930.....	71,000.00	71,000.00	
Treasury Notes 5½%.....	50,000.00	50,000.00	
Standard Oil Company Cum. 7% Stock (1000 shares).....	111,750.00	111,750.00	
Total General Funds.....	1,832,750.00	1,782,428.21	50,321.79

SCHEDULE 5—BONDS AND SECURITIES—Concluded
BONDS AND SECURITIES—ACQUISITIONS, SALES, AND DISPOSAL OF BONDS AND SECURITIES DURING THE YEAR
ENDED AUGUST 31, 1920—Concluded.

	Par Value	Purchase Price	Premium or Discount	
ACQUISITIONS				
LAKE FUNDS				
Miller & Lux First Mtg. 10 yr. Gold 7's 1930.....	10,000.00	10,000.00		
PENSION FUND				
Miller & Lux First Mtg. 10 yr. Gold 7's 1930.....	50,000.00	49,750.00	250.00	
EMPLOYER'S LIABILITY FUND				
Spring Valley 6% Notes 1923.....	13,000.00	13,000.00		
Los Angeles Gas & Electric Corp. 5's 1939.....	5,000.00	4,625.00	375.00	
Miller & Lux First Mtg. 10 yr. Gold 7's 1930.....	6,000.00	6,000.00		
Total Employer's Liability Fund.....	24,000.00	23,625.00	375.00	
Total Acquisitions all Funds.....	1,916,750.00	1,865,803.21	50,946.79	
SALES AND DISPOSALS				
GENERAL FUNDS				
Spring Valley Notes 6's 1920, Matured.....	232,000.00	232,000.00	232,000.00	
Anglo French 5's 1920, Sold.....	300,000.00	294,750.00	291,991.38	2,758.62
Century Club 4's 1924, Retired.....	100.00	100.00	100.00	
Miller & Lux 5's 1935, Called and Exchanged.....	81,000.00	81,000.00	81,000.00	
City of Boston Street Improvement 4's 1921, Sold.....	50,000.00	49,500.00	50,286.60	786.60
Hester School District 1920, Retired.....	2,000.00	2,000.00	2,000.00	
Treasury Notes 5½%, Sold.....	50,000.00	50,000.00	50,000.00	
U. S. Certificates of Indebtedness, Sold.....	50,000.00	50,000.00	50,000.00	
Total General Funds.....	765,100.00	759,350.00	757,377.98	1,972.02
EMPLOYER'S LIABILITY FUND				
Spring Valley 6's Notes 1920, Matured.....	13,000.00	13,000.00	13,000.00	
Miller & Lux 5's 1935, Called and Exch.....	6,000.00	6,000.00	6,000.00	
Total Employer's Liability Fund.....	19,000.00	19,000.00	19,000.00	
Total Disposals all Funds.....	784,100.00	778,350.00	776,377.98	1,972.02

SCHEDULE 6—SUMMARY OF INVESTMENTS IN SECURITIES
SUMMARY OF INVESTMENTS IN SECURITIES FOR THE YEAR ENDED AUGUST 31, 1920.

BONDS		Par Value	Unamortized Premium or Discount	Book Value
Railway: General Funds.....		15,505,000.00	276,141.47	15,343,641.47
Less: Bonds at par International Railway Central America \$875,000.00, on Books \$437,500.00		437,500.00		
Lane Funds.....		15,067,500.00	276,141.47	15,343,641.47
		31,000.00		31,000.00
Total Railway Bonds.....		15,098,500.00	276,141.47	15,374,641.47
Street and Interurban Railway: General Funds.....		604,600.00	80,435.65	524,164.35
Other Public Utilities:				
General Funds.....		1,626,000.00	40,773.69	1,585,226.31
Lane Funds.....		51,000.00	1,636.36	49,163.64
Employer's Liability Insurance Fund.....		18,000.00	361.92	17,638.08
Total Other Public Utility Bonds.....		1,695,000.00	42,771.97	1,652,028.03
Federal, State, and Municipal:				
General Funds.....		767,000.00	5,202.49	772,202.49
Employer's Liability Insurance Fund.....		6,000.00		6,000.00
Total Federal, State and Municipal Bonds.....		773,000.00	5,202.49	778,202.49
Other Bonds: General Funds.....		1,486,400.00	26,152.20	1,435,248.80
Less: Bonds at less than par \$25,000.00 Fuente Coal Co. at \$1.....		24,999.00		
Lane Funds.....		1,461,401.00	26,152.20	1,435,248.80
Employer's Liability Insurance Fund.....		20,000.00	181.00	19,819.00
Pension Fund.....		21,000.00		21,000.00
		50,000.00	250.00	49,750.00
Total Other Bonds.....		1,552,401.00	26,583.20	1,525,817.80
Total Invested in Bonds.....		19,723,501.00	131,353.14	19,854,854.14

SCHEDULE 6—SUMMARY OF INVESTMENTS IN SECURITIES—Concluded
SUMMARY OF INVESTMENTS IN SECURITIES FOR THE YEAR ENDED AUGUST 31, 1920—Concluded.

BONDS	Par Values	Unamortized Premium or Discount	Book Value
General Funds—Unrestricted (Schedule 3 and 7).....	19,526,501.00	133,982.42	19,660,483.42
Lane Funds—Restricted (Schedule 3 and 7).....	102,000.00	2,017.36	99,982.64
Employer's Liability Insurance Fund (Schedule 1 and 7).....	45,000.00	361.92	44,638.08
Pension Fund (Schedule 1 and 7).....	57,000.00	270.00	49,750.00
Total Bonds (Schedule 1 and 3).....	19,723,501.00	131,353.14	19,854,854.14
Bonds—General Funds (Schedule 3).....			19,526,501.00
Bonds—Lane Funds (Schedule 3).....			102,000.00
Corporate Stock (Schedule 3 and 8).....			172,251.00
Mortgage Loans—Unrestricted.....			1,860,919.16
City (Schedule 3).....	1,504,003.24		
Country (Schedule 3).....	297,209.59		
Campus (Schedule 3).....	59,706.33		
Mortgage Loans—Restricted:			
Country (Schedule 3).....			17,900.00
Loans—Campus Buildings (Schedule 3 and 9).....			131,484.21
Unsecured Loans (Schedule 3).....			7,978.69
Board of Athletic Control.....			
Tennis Club Medical Department.....	6,341.09		
W. M. Carruthers.....	70.00		
Palo Alto Stock Farm.....	240.00		
A. H. Wheeler.....	1,195.25		
	132.35		
Total Securities (Schedule 1 and 3).....			21,556,065.64

BONDS—DETAILED FOR THE YEAR ENDED AUGUST 31, 1920.

SCHEDULE 7—BONDS

BONDS UNRESTRICTED	Maturity	Interest Rate	Par Value	Premium and Discount Unamortized	Book Value
Railway Bonds:					
Austin & Northwestern Ry.....	1941	5	100,000.00		100,000.00
Austin & Northwestern Ry.....	1941	5	100,000.00	4,593.50	104,593.50
Atchison, Topeka & Santa Fe 100 yr. Adj.....	1995	4	50,000.00	12,021.60	37,978.40
Atchison, Topeka & Santa Fe, General Mtge.....	1995	4	850,000.00	20,614.20	870,614.20
Baltimore & Ohio.....	1948	4	20,000.00	424.88	20,424.88
Baltimore & Ohio Refdgs. Mtge. (P. L. E. & W. Va.).....	1941	4	864,000.00	15,298.85	848,701.15
Chicago, Milwaukee & St. Paul.....	1989	3½	100,000.00	8,435.76	91,564.24
Chicago, Rock Island & Pacific.....	1988	4	1,500,000.00	111,382.50	1,611,382.50
Chicago & Northwestern.....	1929	5	93,000.00	4,294.65	97,294.65
Chicago & Northwestern.....	1929	6	28,000.00	2,317.20	30,317.20
Chicago & Northwestern.....	1987	5	305,000.00	66,665.25	371,665.25
Central Railroad of New Jersey.....	1948	3½	1,500,000.00	69,346.50	1,569,346.50
Cleveland & Pittsburg.....	1936	4	320,000.00	7,444.80	327,444.80
Denver & Rio Grande First Cons.....	1931	5	2,195,000.00	118,773.65	2,313,773.65
Galveston, Harrisburg & San Antonio—M. & P. Div.....	1952	3½	100,000.00	6,843.50	93,156.50
Illinois Central (Purchased Lines).....	1951	3	500,000.00	92,227.50	407,772.50
Illinois Central—Omaha Division.....	1972	5	875,000.00		437,500.00
*International Railway—Central America.....	1940	4½	313,000.00	23,649.65	336,649.65
Lehigh Valley.....	1997	3½	1,250,000.00	107,013.50	1,357,013.50
New York Central & Hudson River Railroad.....	1998	3½	100,000.00	5,090.00	94,910.00
N. Y. Central & Hudson River R. R., Mich. Cent. Coll.....	1998	3½	1,000,000.00	26,029.00	973,971.00
N. Y. Central & Hudson River R. R., Lake Shore Coll.....	1934	4	155,000.00		155,000.00
N. Y. Central & Hudson River R. R.....	1935	6	50,000.00	95.00	49,905.00
N. Y. Cent. R. Co. 20 yr. Conv. Gold Debentures.....	1921	4	500,000.00	242.50	499,757.50
Northern Pacific—Great Northern.....	1997	4	450,000.00	22,352.85	472,352.85
Northern Pacific—Prior Lien.....	1938	5	200,000.00		200,000.00
Northern Railway of Calif.....					
Amount Forwarded.....			13,518,000.00	392,589.42	13,473,089.42

*International Railway Central America on books at \$437,500.00 to be adjusted at time of disposal.

SCHEDULE 7—BONDS—Continued
BONDS—DETAILED FOR THE YEAR ENDED AUGUST 31, 1920—Continued.

BONDS UNRESTRICTED	Maturity	Interest Rate	Par Value	Premium and Discount Unamortized	Book Value
Amount Forwarded.....					
Oregon Railway & Navigation Co.....	1946	4	13,518,000.00	392,589.42	13,473,089.42
Reading Co.....	1997	4	100,000.00	799.30	99,200.70
San Antonio & Arkansas Pass Ry.....	1943	4	20,000.00		20,000.00
S. P. Branch Ry.....	1937	6	10,000.00	21,868.20	178,131.80
Southern Pac. R. R. Co. of Calif.....	1937	5	107,000.00	2,145.10	12,145.10
Southern Pacific Co. of Calif.—C. P. Coll.....	1949	4	1,000,000.00	4,450.98	111,450.98
Southern Pacific R. R. Co. First Refunding.....	1955	4	1,000,000.00	124,550.00	875,450.00
Texas & New Orleans.....	1943	5	10,000.00	447.45	9,552.55
Union Pacific—First R. R. & Land Grant.....	1947	4	50,000.00	3,934.10	53,934.10
			490,000.00	20,686.82	510,686.82
Total Railway Bonds Unrestricted (Schedule 1 and 3).....			15,505,000.00	276,141.47	15,343,641.47
Federal, State and Municipal:					
City of Boston—Highways.....	1936	4	35,000.00	1,799.10	51,799.10
City of Boston—Sewerage Loan.....	1936	4	15,000.00		
San Francisco School Bonds.....	1926	5	20,000.00		20,000.00
United States:					
Second Liberty Loan—Converted.....	1942	4½	119,500.00		119,500.00
Third Liberty Loan.....	1928	4½	4,000.00		4,000.00
Fourth Liberty Loan.....	1938	4½	386,500.00		386,500.00
Victory Liberty Loan.....	1923	4½	123,000.00		123,000.00
Hester School District.....	1920-52	5	64,000.00	3,403.39	67,403.39
Total Federal, State and Municipal (Schedule 1 and 3).....			767,000.00	5,202.49	772,202.49
Other:					
Palace Hotel Company.....	1928	6	25,000.00		25,000.00
Miller & Lux 7½ 10 yr. First Mtge. Gold.....	1930	7	60,000.00	269.53	59,730.47
Amount Forwarded.....			85,000.00	269.53	84,730.47

SCHEDULE 7—BONDS—Continued
BONDS—DETAILED FOR THE YEAR ENDED AUGUST 31, 1920—Continued.

BONDS UNRESTRICTED	Maturity	Interest Rate	Par Value	Premium and Discount Unamortized	Book Value
Amount Forwarded					
Miller & Lux Inc. 7's 10 yr. First Mtge. Gold.....	1930	7	85,000.00	269.53	84,730.47
City of Toronto—Ontario.....	1925	5½	71,000.00		71,000.00
City of Toronto—Ontario.....	1926	5½	25,000.00	846.50	24,153.50
Province of Ontario.....	1922	5½	25,000.00	986.25	24,013.75
Associated Oil Company—First Refunding.....	1930	5	50,000.00	525.00	49,475.00
Associated Oil Company.....	1922	5	7,000.00	231.27	6,768.73
Alexander Boyd Estate.....	1926-36	5	11,000.00		11,000.00
Century Club.....	1924	4	100,000.00		100,000.00
Crocker Hotel Company.....	1927-28	5½	400.00		400.00
*Fuente Coal Company.....	Various		25,000.00		1.00
Hobart Estate Company.....	1937	6	17,000.00		17,000.00
Insurance Exchange.....	1939	5½	49,000.00		49,000.00
Morris & Co.—1st Mtge. Skg. Fund.....	1928	4½	50,000.00	6,023.65	43,976.35
Palace Hotel Co. 1st Mtge. 20 yr.....	1926	6	301,000.00	1,143.80	299,856.20
Province of Quebec.....	1931	5	100,000.00	256.80	100,256.80
San Francisco Dry Dock Co.....	1934	5	20,000.00		20,000.00
Sperry Flour Co. 1st Mtge. Sinking Fund.....	1939	6	100,000.00	1,850.00	98,150.00
Trinity Buildings Corporation.....	1934	5½	50,000.00	300.00	49,700.00
French Cities 6% Gold Bonds, Lyons.....	1934	6	35,000.00	2,502.50	32,497.50
French Cities 6% Gold Bonds, Marselles.....	1934	6	35,000.00	2,502.50	32,497.50
French Cities 6% Gold Bonds, Bordeaux.....	1929	6	30,000.00	2,145.00	27,855.00
Province of New Brunswick—Canada.....	1929	5½	50,000.00	2,555.00	47,445.00
United Kingdom of Great Britain & Ireland 10 yr. Conv.....	1939	5½	100,000.00	3,438.00	96,562.00
Swedish Government 20 yr. 6's.....	1939	6	50,000.00	1,090.00	48,910.00
Total Other Bonds (Schedule 1 and 3).....			1,486,400.00	26,152.20	1,455,248.80

*Fuente Coal Co. on books at \$1.00 difference of \$24,999.00.

SCHEDULE 7—BONDS—Continued
BONDS—DETAILED FOR THE YEAR ENDED AUGUST 31, 1920—Continued.

BONDS UNRESTRICTED					
	Maturity	Interest Rate	Par Value	Premium and Discounts Unamortized	Book Value
Street and Interurban Railway:					
Brooklyn Rapid Transit Co. Certif. for 3 yr. notes.....	1921	7	35,000.00		35,000.00
Brooklyn Rapid Transit Co. 50 yr. Gold Bonds.....	1945	5	20,000.00	1,039.18	21,039.18
Interborough Rapid Transit Co. First Refunding.....	1966	5	7,000.00		7,000.00
Los Angeles Railway.....	1938	5	23,000.00	3,246.17	28,246.17
Market St. Ry. First Consolidated Mtge.....	1924	5	50,000.00	357.00	49,643.00
New York Rys.—1st Real Est. and Refunding.....	1942	4	125,000.00	6,489.00	118,511.00
New York Rys.—30 yr. Adjustment Mtge.....	1942	5	250,000.00	77,875.00	172,125.00
Omnibus Cable Company.....	1918	6	4,000.00		4,000.00
Sacramento Northern Ry.....	1937	5	86,600.00		86,600.00
Sacramento Electric Gas & Ry. Co.....	1927	5	2,000.00		2,000.00
Total Street and Interurban (Schedule 1 and 3).....			604,600.00	80,435.65	524,164.35
Other Public Utilities:					
Calif. Gas & Elec. Corp.....	1937	5	10,000.00	227.99	9,772.01
Amer. Telephone & Telegraph Co. Adja.....	1924	6	50,000.00	38.98	50,038.98
Calif. Gas & Elec. Corp'n.....	1937	5	25,000.00	986.30	24,013.70
Los Angeles Gas & Elec. Corp'n.....	1939	5	50,000.00	613.20	49,386.80
Pacific Telephone & Telegraph Co.....	1937	5	100,000.00		100,000.00
Santa Barbara Gas & Electric Corp'n.....	1941	5	141,000.00	6,607.68	134,392.32
South Yuba Water Co.....	1923	6	10,000.00	247.45	10,247.45
Amer. Telephone & Tel. Co. Notes 6's.....	1922	6	100,000.00	560.00	99,440.00
Spring Valley Water Co.....	1923	4	400,000.00	10,198.00	389,802.00
Los Angeles Gas & Elec. Corp. 5's.....	1939	5	24,000.00	1,737.22	22,262.78
Amount Forwarded.....			910,000.00	20,643.96	889,356.04

SCHEDULE 7—BONDS—Continued
BONDS—DETAILED FOR THE YEAR ENDED AUGUST 31, 1920—Continued.

BONDS UNRESTRICTED	Maturity	Interest Rate	Par Value	Premium and Discount Unamortized	Book Value
Amount Forwarded.....					
Los Angeles Gas & Elec. Corp. 5's.....	1939	5	910,000.00	20,643.96	889,356.04
San Joaquin Light & Power Corp. 6's.....	1950	6	1,000.00	75.13	924.87
Los Angeles Gas & Elec. Corp. 5's.....	1939	5	50,000.00	685.00	49,315.00
Southern Calif. Telephone Co. 1st & Ref. 5's.....	1947	5	25,000.00	1,809.60	23,190.40
Spring Valley Notes.....	1923	6	50,000.00	7,760.00	42,240.00
Pac. Gas & Elec. Co. 5 yr. Coll. Trust Conv. Gold Bonds.....	1925	7	237,000.00		237,000.00
Granville Elec. & Gas Co. Cons. Mtge. 5's.....	1933	5	350,000.00	9,800.00	340,200.00
			3,000.00		3,000.00
Total Other Public Utilities (Schedule 1 and 3).....			1,626,000.00	40,773.69	1,585,226.31
BONDS—RESTRICTED					
LANE MEDICAL LIBRARY FUNDS					
Railway:					
Northern Railway of California 50 yr. 1st Mtge.....	1938	5	14,000.00		14,000.00
San Francisco & San Joaquin Val. Ry. 1st Mtge.....	1940	5	15,000.00		15,000.00
Southern Pacific Branch Ry. 1st Mtge.....	1937	6	2,000.00		2,000.00
Total Railway Bonds.....			31,000.00		31,000.00
Other Public Utility:					
California Gas & Electric Corp'n, Unif'g & Refunding.....	1937	5	31,000.00	1,505.58	29,494.42
Pacific Telephone & Telegraph Co. 1st & Coll. Trust.....	1937	5	20,000.00	330.78	19,669.22
Total Other Public Utility.....			51,000.00	1,836.36	49,163.64
Other:					
Sperry Flour Company 1st Mtge. Sinking Fund.....	1934	6	10,000.00	181.00	9,819.00
Amount Forwarded.....			10,000.00	181.00	9,819.00

SCHEDULE 7—BONDS—Concluded

BONDS—DETAILED FOR THE YEAR ENDED AUGUST 31, 1920—Concluded.

BONDS UNRESTRICTED	Maturity	Interest Rate	Par Value	Premium and Discount Unamortized	Book Value
Amount Forwarded.....					
Miller & Lux 7% 10 yr. First Mtge. Gold.....	1936	7	10,000.00	181.00	9,819.00
			10,000.00		10,000.00
Total Other Bonds.....			20,000.00	181.00	19,819.00
Total Lane Medical Library Bonds (Schedule 1 and 3).....			102,000.00	2,017.36	99,982.64
EMPLOYER'S LIABILITY INSURANCE FUND					
Other Public Utilities:					
Spring Valley Water Co.....	1923	6	13,000.00		13,000.00
Los Angeles Gas & Elec. Corporation 5's.....	1939	5	5,000.00	361.92	4,638.08
Total Other Public Utilities.....			18,000.00	361.92	17,638.08
State, Federal and Municipal:					
U. S. Gov't—Third Liberty Loan.....	1928	4½	6,000.00		6,000.00
Other:					
Hobart Estate Co.....	Various	6	9,000.00		9,000.00
Miller & Lux Inc.....	1930	7	6,000.00		6,000.00
City Investment Co.....	1934	5	6,000.00		6,000.00
Total Other Bonds.....			21,000.00		21,000.00
Total Employer's Liability Insurance Bonds (Schedule 1 and 12)			45,000.00	361.92	44,638.08
PENSION FUND BONDS					
Other:					
Miller & Lux 7% 10 yr. Gold First Mtge. (Schedule 1 and 12).....	1930	7	50,000.00	250.00	49,750.00

SCHEDULE 8—CORPORATE STOCKS

FOR YEAR ENDED AUGUST 31, 1920.

	Book Value	Dividends From Earnings Received During Year 1919-1920	Liquidation Dividends Received During Year 1919-1920
Chicago, Rock Island & Pacific Railway Co.:			
400 Shares 7%, Preferred.....	40,000.00	2,800.00	
1000 Shares, Common.....	20,000.00		
American Cotton Company:			
250 Shares, Preferred.....	1.00		
125 Shares, Common.....			
Chevy Chase Land Company:			
187 Shares.....	100.00		
Ione Coal & Iron Company:			
8000 Shares.....	100.00	2,400.00	10,000.00
Oakland Water Front Company:			
7274 Shares.....	100.00		
Pacific Improvement Company:			
12,500 Shares.....	100.00		1,025.29
Rocky Mountain Coal and Iron Company:			
1842 Shares.....	100.00		10,691.71
Standard Oil Company of New Jersey:			
1000 Shares 7% Cumulative.....	111,750.00	5,250.00	
Schedule.....	172,251.00 3	10,450.00 16	*21,717.00 24
Total Book Value.....			

*Closed to Capital Increase Since Endowment.

SCHEDULE 9—DETAIL OF BUILDING FUND LOAN

FOR YEAR ENDED AUGUST 31, 1920.

Balance Owed the Investment Assets by Current Section, August 31, 1919.....			1,020,077.20
CHARGES			
Expenditures for Construction During Year Authorized by Trustees' Resolution of August 27, 1920:			
University Library Equipment.....	31,494.86		
University Library Building.....	57,300.12		
Power House Equipment and Building Additions.....	10,495.52		
Electrical Sub-Station.....	120.00		
President's House and Grounds.....	630.09		
Nurses' Home—S. F. Survey.....	95.00		
Roble Hall—Architect's Fees.....	630.00		
Total Expenditures Authorized.....	100,765.59		
Interest on Monthly Balances.....	5,404.77		
Adjustment of Overcredit in 1918, no Provision for Bad Debts Reserve.....	1,213.61		
Adjustment of Error, April, 1919.....	107.32		
Adjustment of Expense for Removing Museum Dome.....	877.54		
Adjustment Silverware—Lane Hospital.....	872.15	1,100.90	107,271.26
			1,127,348.46
CREDITS			
Transfers Authorized by Trustees' Resolutions of January 30, 1920, details of which are contained therein:			
Educational Plant Assets Transferred to Investment Section.....	1,128,396.69		
Investment Assets Transferred to Educational Plant.....	700,552.46		
Net Transfer Authorized.....	427,944.23		
Appropriation from Surplus to Repay Loan—Resolution January 30, 1920.....	500,000.00		
Annual Appropriation from Income.....	150,000.00		
Appropriated from Reserve for Contingencies—Resolution November 5th, 1920.....	180,888.44		1,258,832.67
Balance August 31, 1920 (Schedule 3).....			131,484.21

REPORT OF THE COMPTROLLER

To the Honorable Board of Trustees of Stanford University and to the President of the University:

The Comptroller herewith submits the following report covering the University's financial operations for the period beginning September 1, 1919, and ending August 31, 1920:

NEW PLAN OF FINANCIAL OPERATION

Many changes in the financial operation of the University were inaugurated with the beginning of the fiscal year of 1919-20. At this time, the office of Business Manager was abolished and the office of Comptroller established. The duties and authority of the Business Manager relating to the University's operating plant were vested in the Comptroller and those relating to the investments of the University were vested in the Treasurer. The operating plant may be defined as consisting of the University Campus with its buildings and structures, including class rooms, dwellings, dormitories, street car line, and service departments; and the Medical School buildings, hospitals in San Francisco, and the Hopkins Marine Station at Pacific Grove.

The Treasurer of the University has charge of the cash and the securities of the Trust and receives and disburses the funds of the Board under the direction of the Finance Committee. Acting for the Treasurer, and under his direction, the Comptroller handles the cash of the Educational Plant and makes payment of salaries and expenses.

The Educational Plant is under the control of the President of the University who directs its financial activities in accordance with a budget decided upon by the Board of Trustees before the beginning of each fiscal year.

The Finance Committee of the Board of Trustees prepares and submits to the Board of Trustees annually, at the January meeting of the Board, a budget showing the probable income of the trust, and the amount which will be available for use during the ensuing year. After the Board has set aside the amount necessary for insurance and the care of the property outside of the campus, and a depreciation and reserve fund, the balance is appropriated for university purposes. At the close of each calendar year, the Comptroller and the heads of the academic departments prepare detailed estimates of the cost of their respective departments for the following academic year and submit the same to the President of the University for approval. These estimates, when so approved, are submitted by the President to the University Committee, and by it reported to the Board of Trustees, with its approval, or otherwise, as the case may be. Upon this report of the University Committee, the Board of Trustees appropriates such sums as it may think fit for the expenditures for the year of the different departmental faculties, or other spending departments, which appropriations are considered as final, and are not to be varied without subsequent resolutions of the Board.

All supplies or cash advances required by any department are set forth in a requisition and signed by the head of the department and filed

with the Comptroller. Requisitions must bear reference to, and not exceed the appropriation to which they are chargeable, and it is the duty of the Comptroller to see that all requisitions come within the appropriations.

It is the duty of the Comptroller to prepare and present monthly statements of the financial operations of the University to the Board of Trustees and to the President of the University, and to prepare and submit to the President, and each department, monthly budget statements showing the status of each appropriation account. As the agent of the Board of Trustees, the Comptroller is charged with the management and supervision of the following departments and their operations:

1. Accounting.
- * 2. Purchasing and store keeping.
3. Maintenance of grounds and buildings.
4. Heating, lighting and water supply.
5. University Press.
6. New construction.

It is his duty to consult the President of the University on all matters affecting University policy, or academic or student life on the campus. No leases or other similar arrangements can be made by him in connection with the Educational Plant without the consent of the President of the University.

By a resolution dated August 2, 1920, the supervision of the Palo Alto Stock Farm containing approximately 7400 acres exclusive of the campus was vested in the Comptroller.

ACCOUNTING SYSTEM

Pursuant to the recommendation, and under the direction of Klink Bean Co., certified accountants, the University accounting system has been completely revised, and on September 1, 1920, an entire new set of books was opened up. This revision of accounts has greatly facilitated the furnishing of accounting details for the information of the Board of Trustees and the President, and the rendition of monthly financial statements.

The removal of the accounting office from San Francisco to the campus, and the concentration of the various administrative offices in the administration building has eliminated much correspondence, delay and duplication of records.

Owing to the different classifications in the new and old accounting systems, it is almost impossible to make reliable comparisons between the accounts covering operations for the year 1919-20 and those of previous years and comparative tables have not been included in the financial statements hereinafter set forth. Hereafter such tables will be furnished.

SERVICE DEPARTMENTS

GROUND

A survey of the university service departments showed that the University was carrying much useless equipment and maintaining a bunk

house and several unsightly barns which could be dispensed with and that a greater concentration of the various units could be effected. In the month of February a public auction was held in the corporation yard, at which approximately \$15,000.00 worth of horses and equipment were sold. Much of this equipment was originally used on the Palo Alto Stock Farm and the Vina Ranch and was no longer needed. The reduction in the number of horses kept by the University from forty-eight to ten made it possible to dispense with the bunk house and two large stables. These buildings were sold to a wrecking concern for the sum of \$2250.00 and the money derived from the sale thereof, and from the sale of the horses and equipment was set aside by the Board of Trustees to cover the cost of remodeling the corporation yard and moving the lumber yard and foremen's cottages from the area directly in front of Roble Hall, as heretofore recommended by the President of the University and the Grounds Committee.

By the end of the year, this work was well under way. The barns and bunk house had been removed and the sheds rearranged so as to permit the storing of all building materials within the area formed by the mechanical shops and press building. The old plumbing shop had been remodeled to serve as a small barn, and steps were being taken to move building materials into this area and to move the foremen's cottages to a location just west of Governor's Avenue. The removal of these old structures will greatly improve the appearance of the campus, and also provide space for the women's athletic fields.

The department dealing with the care and maintenance of the grounds has been completely reorganized. The positions of Superintendent of Grounds and Buildings has been abolished and a skilled gardener has been placed in charge of the grounds as Grounds Foreman. Wherever possible, labor saving machinery has been installed and as a result of various changes and economies, the number of laborers employed in the care of the grounds was reduced by approximately 50% and the overhead expense greatly reduced.

Under the direction of Mr. John McLaren, who gratuitously has been acting as advisory landscape architect, and pursuant to the general plans for the beautification of the campus, the following new planting has been done:

The planting on the President's grounds has been completed.

The areas adjoining Roble Hall and the west side of Encina Hall have been planted to shrubs and conifers.

In front of the new library building, walks have been completed, curbs installed and low growing ornamental shrubs planted.

The entrance to the grounds has been planted with oaks and Roman pines, and the area at the base of the balustrades in front of the main group of buildings has been prepared for permanent planting. Present plans contemplate that this last mentioned area shall be planted to perennial ornamental shrubs as soon as the plants can be grown in the University nursery. For the present, annuals are being planted in various places until they can be replaced with permanent planting.

The corner opposite the men's Union and the area directly in front of the Union, and the area behind the post office also have been planted to shrubs.

Mr. McLaren and Prof. Leroy Abrams of the Botany Department, who also has been cooperating with the Comptroller's staff, have recommended the planting of shrubs and trees which require little care or irrigation, and with this object in view, thousands of shrubs and trees, including such well known California natives as Toyon, Madrone and Manzanita have been started in the University nursery.

WATER SUPPLY

The University maintains two complete and separate water systems; one furnishing water for irrigation and the other water for domestic purposes. Water for irrigation is derived from two storage reservoirs situated in the hills back of the University, and commonly known as Searsville Lake and Felt Lake. Water from these reservoirs is distributed by gravity to various points on the University campus.

Owing to sedimentation, the capacity of these reservoirs over a period of thirty years gradually has been reduced approximately one-half, and, as a result thereof, the supply of irrigation water during recent years has proven inadequate. In 1918, the Board of Trustees employed engineers to investigate and report on the possible development of an increased irrigation supply. The following propositions were carefully considered:

1. Increasing the capacity of Searsville reservoir by raising the dam.
2. Increasing the capacity of Felt Lake reservoir by raising the dam.
3. Restoring the Searsville reservoir to its former capacity by dredging.
4. Building a new dam on San Francisquita Creek at a point below the present Searsville dam.

The first proposition was finally adopted as being the most practicable and least expensive and, during the past year, the project has been carried out under the direction of the Treasurer of the University. By the addition of four feet to the height of the Searsville dam and the closing of the spillway by means of flash-boards, the water level has been raised nine feet and the reservoir restored to almost exactly its original capacity of 327,000,000 gallons. This increase in storage facilities should provide an adequate irrigation supply for the campus for some years to come, but it will not provide sufficient water to irrigate the Palo Alto Stock Farm. Until a water supply for the irrigation of the Palo Alto Stock Farm is developed, it will be impossible to develop this property to its highest productivity.

The raising of the water level necessitated the raising of some four-hundred feet of the Portola Woods county road to a maximum increased height of four feet. This work was performed by the University laborers under the direction of the Comptroller and grounds foreman at approximately fifty per cent of the amount bid by contractors.

The domestic supply is derived from two pumping plants, one in the arboretum and the other on the county road near Mayfield. Owing to the increase in campus population and the decreased efficiency of the pumps due to the lowering of the water levels, the supply of domestic water has been barely adequate during the past year. On several occasions it has been necessary to request residents of the campus to curtail their use of water in order that a safe margin might be maintained in reserve for fire protection.

The following steps have been taken to remedy this situation:

The Board of Athletic Control has installed a pumping plant at the gymnasium for the purpose of supplying water for the swimming pool. A fine well has been brought in at this point and, as soon as equipment can be obtained, this supply will be connected with the showers in the gymnasium. These facilities will greatly lighten the load on the University plants. A new well will also be drilled at the county road plant. It is hoped that, with the addition of this new well, the county road pumping plant will be able to supply the entire needs of the campus and that the operation of the arboretum plant can be discontinued, thereby reducing the cost of operation.

During the past year the water systems have operated at a loss and, unless anticipated economies can offset this loss, it is recommended that the water rates, which now are extremely low, be increased.

UNIVERSITY ENGINEER

Many engineering problems arise in connection with the water supply, subdivision improvements, ventilation, heating, lighting and construction, and it has been deemed advisable to establish the office of University Engineer. Mr. Chauncey T. Keefer, a graduate of Stanford, has been appointed to this position.

One of his first tasks has been to complete detailed maps showing the exact location of all service mains and connections on the campus, and to install a uniform system of map making and filing. Some of the problems which are being studied by the University Engineer are the following:

1. Increase of domestic water supply.
2. Proper ventilation and lighting of assembly hall.
3. Possible economies in heating and the possibility of generating electricity at the steam plant.

THE UNIVERSITY PRESS

The University now owns and operates a splendidly equipped printing and book-binding plant, representing a total investment of approximately \$34,500. In addition to printing the University publications and student periodicals, the press has been able to handle some outside printing during slack periods. The primary purpose, however, is to furnish a high grade of printing for the educational plant at the lowest possible cost without profit. Mr. William A. Friend, former manager of the Sacramento branch of the H. S. Crocker Company, has been appointed super-

intendent of the press. Under his competent management, the press is operating efficiently and satisfactorily, and the University printing is being done at a cost below commercial rates. It is hoped that the University press may be developed as an educational factor until it enjoys a reputation comparable with the leading university presses of the country.

PURCHASING AGENT

Prior to May, 1920, the purchasing of the University, including the hospitals in San Francisco, was done through one purchasing agent who maintained two offices, one in San Francisco, and one on the campus. This system proved unsatisfactory, and led to much delay. A new system has now been organized, under which the purchasing for the departments situate on the campus is handled by a purchasing agent who has his office at the University and who is also the store keeper. The purchasing at the hospitals is handled by a Purchasing Agent who has his offices at the Hospital, and who also has charge of the store department. The new system has proved highly satisfactory and in addition to providing more efficient service, has resulted in considerable economies in overhead cost.

A total of 6832 purchasing orders were issued for the year, of which 3112 covered purchases for the departments on the campus, and 3720 represented hospital and medical school purchases. Books and publications for the library are purchased through the University Librarian.

JANITOR SERVICE

For some years past, the janitors have been divided into two groups, one of which cared for the dormitories and the other for the class room buildings. By reorganizing the work and dividing the time of the entire force between the dormitories and the class rooms, it has been possible to reduce the number of janitors from forty-five to thirty-two. This change will effect a saving of some \$7,000.00 a year for the coming year after allowing for a wage increase of \$10.00 per month. The janitor service still lacks proper supervision, and it is hoped that it can be placed on a more efficient basis during the coming year.

DORMITORIES

Pursuant to the President's plan for the improvement of living conditions in the dormitories, the following improvements have been completed:

A new ventilation system has been installed in the kitchen of Roble Hall; new lavatories and showers in Encina Hall, at a total cost of approximately \$12,000. A ladies' reception room has been constructed at Sequoia Hall, telephone booths have been provided on each floor of Encina and Sequoia Halls, and a telephone call service installed. Additional study tables have been furnished and additional dressers and chiffoniers have been ordered and will be installed during the coming year. The dining room at Sequoia Hall has been opened to accommodate a cooperative eating club of 120 members, most of whom are residents of the hall. The equipment to furnish the kitchen and dining room was purchased for the

club by the University at a total cost of \$2,000.00 and the cost thereof was repaid by the club before the end of the college year. The club has proved highly satisfactory and has helped slightly to relieve the shortage of campus eating facilities.

ROCK CRUSHER

For some years past the University has operated a rock crusher from which it has obtained materials for the construction and repair of its roads. During the year 1918-19 the crusher was operated at a loss of approximately \$4,000. A survey of the condition and operation of the crusher, filed by the former Superintendent of Buildings and Grounds, showed that the crusher could not be operated profitably without extensive improvements calling for an expenditure of \$60,000. The expenditure of such a large sum for this purpose not seeming advisable, operation of the crusher was discontinued on November 1, 1919. Private parties have since been interested in leasing the crusher and it is believed that arrangements soon will be completed whereby these parties will operate the crusher on a royalty basis. This will relieve the University of the trouble and expense incident to operating the plant, and enable it to obtain such materials as it may need at cost.

NEW CONSTRUCTION AND REPAIRS TO BUILDINGS

The only new construction has been the erection of one faculty house on Alvarado Row, the Military barracks, gun sheds and stables. The Military buildings have been erected in the area immediately adjoining the football bleachers on the south.

Many of the cottages owned by the University have been extensively repaired. There have been several important alterations in the Quadrangle buildings. The principal alterations have been the remodeling of the old library as an administration building; the remodeling of the former business office into offices and class rooms for the Greek and Latin department; and the remodeling of the former President's office into offices and class rooms for the German department.

The past year, having been the first under the new system of management, has been devoted largely to reorganization and the building up of the Comptroller's staff.

Upon the removal of the Accounting office from San Francisco to Palo Alto, practically the entire accounting staff resigned and it became necessary to build up a complete new organization. On November 1, 1919, Mr. E. S. Erwin was appointed chief accountant and under his able direction an efficient organization has been perfected and much valuable service rendered.

The Comptroller feels that he has been particularly fortunate in securing competent heads for the various departments which fall under his supervision, and it is hoped that during the coming year many economies may be effected in the management of the University's physical plant.

In closing this report, the Comptroller desires to express his appreciation of the valuable cooperation and assistance which he has received from the President of the University, from Mr. Timothy Hopkins, Treasurer of

the Board of Trustees, and the members of the faculty, during this period of reorganization, and also to express his appreciation of the loyalty and energy displayed by the members of his staff and the University's employees.

Financial statements showing operations during the period covered by this report are hereunto annexed.

A. E. ROTH,
Comptroller.

COMPTROLLER'S FINANCIAL TABLES

INDEX TO COMPTROLLER'S FINANCIAL TABLES

	SCHEDULE
Assets—Current—Analysis of	14
Balance Sheet—General	10
Balance Sheet—Current, Investment, Educational Plant.....	11
Balance Sheet—Current	12
Buildings and Improvements—Educational Plant.....	22
Capital Increase Since Endowment—Analysis.....	24
Educational Plant Assets	22
Endowments—Schedule of	23
Endowments—Capital Increase Since	24
Expenditures—Analysis of	18 and 19
Expenditures from Special Funds	25
Gifts	25
Hospitals—Income and Expenses	17
Income—Analysis of	16
Income, Expenditures and Surplus—Current.....	13
Income Section Educational Plant and Other Units—Operations of.....	20
Income from Special Funds—Schedule of.....	25
Liabilities—Current—Analysis of	15
Loans to Students	26
Medical Division—Income and Expenses.....	17
Press—Operations of	20
Scholarships	25
Student Loans—Schedule of	26
Surplus	13 and 21
Unappropriated and Unexpended Balances, Special Funds.....	25

(See Treasurer's Report for Additional Tables.)

REPORT OF THE PRESIDENT

81

DESCRIPTION	THIS YEAR	
	Detail	Total
ASSETS		
Cash Assets:		
Current Funds.....	84,516.65	
Investment Funds.....	74,483.44	159,000.09
Accounts Receivable Assets:		
Accounts Receivable.....	51,188.44	
Rents Receivable.....	1,294.50	
Interest Accrued.....	269,907.95	
Bonds—Pension Fund (Schedule 12 and 7).....		328,390.89
Employer's Liability Insurance Fund (Schedule 12 and 7).....		49,750.00
Securities (Schedule 3 and 6).....		44,638.08
Contracts of Sale.....		21,556,065.64
Lands, Buildings and Equipment:		941,736.89
Investment (Schedule 3 and 4).....	1,173,056.69	
Educational Plant (Schedule 11 and 22).....	8,259,144.54	
Income Section Educational Plant.....	1,340,726.91	
Other Assets:		10,772,928.14
Liberty Bonds, Employees.....	211.72	
Bonds as Deposits.....	400.00	
Investment (Schedule 3).....	138,757.56	
Working Assets.....		139,369.28
Deferred Charges to Operations (Schedule 12).....		149,381.56
		17,535.52
Total Assets.....		34,158,796.09

SCHEDULE 10—GENERAL BALANCE SHEET—Concluded
GENERAL BALANCE SHEET AS AT AUGUST 31, 1920—Concluded.

DESCRIPTION	THIS YEAR	
	Detail	Total
LIABILITIES		
Immediate Demands for Cash (Schedule 15).....		81,328.44
Other Liabilities:		
Unappropriated Income.....	27,169.86	
Hospital and Special Funds.....	3,241.50	
Loan and Relief Funds.....	30,411.36	
Unclaimed Deposits.....	4,154.21	
Deferred and Contingent.....	2,989.61	
(Schedule 25)	18,128.99	55,684.17
(Schedule 26)		
Total Liabilities.....		137,012.61
RESERVES		
Reserve for Deferred Charges to Operations.....	17,535.52	
Other Reserves.....	144,318.76	161,854.28
ENDOWMENTS		
Unrestricted Endowments.....	21,297,207.91	
Restricted Endowments.....	813,724.20	
Capital Increase Since Endowment.....	3,489,852.55	
Endowments Expended on Educational Plant.....	4,170,921.70	29,771,706.36
SURPLUS		
Surplus Income Expended on Educational Plant.....	4,088,222.84	4,088,222.84
Total.....		34,158,796.09

SCHEDULE 11—BALANCE SHEET

BALANCE SHEET AS AT AUGUST 31, 1920.

CURRENT

ASSETS (Schedule 14)	Total	LIABILITIES (Schedule 15)	Total
Cash on Hand and in Bank.....	84,516.65	Immediate Demands for Cash.....	81,328.44
Accounts Receivable.....	328,390.89	Due to Investment Funds.....	375,957.53
Other Assets.....	94,999.80	Other Liabilities.....	55,684.17
Working Assets.....	149,381.56	Reserves.....	161,854.28
Deferred Charges to Operation.....	17,535.52	Current Surplus:	
		Cash in Excess of Immediate	
		Demands for Cash.....	3,188.21
		Accounts Receivable in Excess of Due to	
		Investment Funds and Other Liabilities...	141,130.55
		144,318.76	
		Less: Reserve other than that for deferred	
		charges.....	144,318.76
Total.....	674,824.42	Total.....	674,824.42

INVESTMENT

ASSETS (Schedule 3)	Total	ENDOWMENTS	Total
Securities (Schedule 6).....	21,556,065.64	Unrestricted Endowments (Schedule 23).....	21,297,207.91
Lands, Buildings, and Equipment (Schedule 4).....	1,173,056.69	Restricted Endowments (Schedule 23).....	813,724.20
Contracts of Sale.....	941,736.89	Capital Increase Since Endowment (Schedule 24).....	3,489,852.55
Due from Current Funds.....	375,957.53		
Cash in Banks.....	74,483.44		
Other Assets.....	138,757.56		
Income Section—Educational Plant.....	1,340,726.91		
Total.....	25,600,784.66	Total.....	25,600,784.66

SCHEDULE 11—BALANCE SHEET—Concluded
BALANCE SHEET AS AT AUGUST 31, 1920—Concluded.

EDUCATIONAL PLANT

ASSETS	Total	ENDOWMENTS AND SURPLUS INCOME EXPENDED	Total
Land.....	18,633.66	Endowments Expended on Educ. Plant (Schedule 23).....	4,170,921.70
Buildings and Structures.....	6,764,662.36	Surplus Income Expended on Educational Plant.....	4,088,222.84
Improvements.....	540,196.34		
Equipment.....	1,749,820.83		
Unsegregated.....	1,433,104.37		
Total.....	10,506,417.56		
Less: Educational Plant Assets Transferred to Investment Section.....	2,247,273.02		
Total (Schedule 22).....	8,259,144.54		8,259,144.54

REPORT OF THE PRESIDENT

85

BALANCE SHEET AS AT AUGUST 31, 1920. SCHEDULE 12—BALANCE SHEET

DESCRIPTION	THIS YEAR	
	Detail	Total
ASSETS (Schedule 14)		
Cash on Hand and in Banks:		
Revolving Funds.....	21,190.00	
Cash in Bank—Commercial.....	63,326.65	
Cash on Hand.....		84,516.65
Accounts Receivable:		
Accounts Receivable.....	57,188.44	
Rents Receivable.....	1,294.50	
Interest Accrued.....	269,907.95	
		328,390.89
Other Assets:		
Liberty Bonds—Employees.....	211.72	
Bonds—Employers' Liability Insurance Fund (Schedule 7).....	45,000.00	
Bond Premium and Discount—Employer's Liab. Ins. Fund.....	361.92	
Bonds Received as Deposits.....	400.00	
Bonds Pension Fund (Schedule 7).....	50,000.00	
Bond Premium and Discount—Pension Fund.....	250.00	
		94,999.80
Working Assets:		
General Stores.....	132,437.49	
Merchandise.....	8,565.44	
Prepaid Expenses.....	8,378.63	
Deferred Charges to Operation.....		149,381.56
Work in Process.....	17,475.55	
Suspense.....	59.97	
		17,535.52
Total Assets.....		674,824.42

BALANCE SHEET AS AT AUGUST 31, 1920—Concluded.

SCHEDULE 12—BALANCE SHEET—Concluded

DESCRIPTION	THIS YEAR	
	Detail	Total
LIABILITIES (Schedule 15)		
Immediate Demands for Cash:		
Pay Rolls Payable.....	21,812.87	
Accounts Payable.....	46,955.05	
Depositors.....	9,410.85	
Student Bodies.....	3,149.67	81,328.44
Due to Investment Funds.....		375,957.53
Other Liabilities:		
Unappropriated Income.....	27,169.86	
Loan and Relief Funds.....	4,154.21	
Hospital and Special Funds.....	3,241.50	
Unclaimed Deposits.....	2,989.61	
Deferred and Contingent.....	18,128.99	
Reserves:		55,684.17
Reserve for New Press Equipment Purchased.....	5,808.54	
Reserve for Uncollectible Accounts.....	832.94	
Reserve for Depreciation of Equipment.....	16,054.39	
Reserve for Employer's Liability Insurance.....	49,325.99	
Reserve for Pension Fund.....	50,602.77	
Reserve for Sinking Fund—University Club Building.....	21,694.13	
Reserve for Deferred Charges to Operations.....	17,535.52	
Current Surplus:		161,854.28
Cash in Excess of Immediate Demands for Cash.....	3,188.21	
Accounts Receivable and Other Assets in Excess of Due to Investment Funds and Other Liabilities.....	141,130.55	
	144,318.76	
Less: Reserve other than that for Deferred Charges.....	144,318.76	
Total Liabilities.....		674,824.42

SCHEDULE 13—STATEMENT OF CURRENT INCOME, EXPENDITURES AND SURPLUS
STATEMENT OF CURRENT INCOME, EXPENDITURES AND SURPLUS FOR YEAR ENDING AUGUST 31, 1920.

DESCRIPTION	THIS YEAR
INCOME (Schedule 16)	
Income from Securities.....	1,016,535.78
Income from Real Estate.....	48,561.38
Income from Other Investment Assets.....	5,750.14
Income from Special and Endow. Funds (Schedule 25).....	54,639.93
Income from Academic Sources.....	325,725.83
Income from Dormitories and Residences.....	105,611.50
Sales.....	111,052.81
Income from Other Sources.....	515,014.31
Total Income.....	2,182,891.68
Less: Income Appropriated to Special and Endowment Funds (Schedule 25).....	42,043.78
Total Net Incomes.....	2,140,847.90
EXPENDITURES (Schedule 18)	
Expenses:	
Administration and General.....	372,115.35
Instruction and Research.....	817,133.56
Independent Departments and Divisions.....	650,665.43
Operations and Maintenance of Educational Plant.....	165,197.31
Service Departments.....	141,612.18
Investment Enterprises.....	53,236.21
Total Expense.....	2,199,960.04
Capital:	
Educational Plant Additions.....	95,077.40
Total Capital.....	95,077.40
Total Expenditures.....	2,295,037.44
Net Loss for Period.....	154,189.54

SCHEDULE 13—STATEMENT OF CURRENT INCOME, EXPENDITURES AND SURPLUS—Concluded
STATEMENT OF CURRENT INCOME, EXPENDITURES AND SURPLUS FOR YEAR ENDING AUGUST 31, 1920—Concluded.

DESCRIPTION	THIS YEAR
CURRENT SURPLUS	
Surplus—First of Period.....	115,807.12
Surplus Adjustment.....	125,539.61
Net Loss as Above.....	154,189.54
Surplus as Affected by Deferred Accounts.....	144,457.05
Surplus Available for Current Purposes (Schedule 21)	
SURPLUS EXPENDED ON EDUCATIONAL PLANT	
Surplus Income Expended—First Period.....	4,319,451.93
Adjustment—Plant Transfer.....	1,020,305.95
Appropriation from Surplus to Repay Loan.....	650,000.00
Educational Plant Additions—As Above.....	95,077.40
Total	4,044,723.38

SCHEDULE 14—ANALYSIS OF CURRENT ASSETS
ANALYSIS OF CURRENT ASSETS AS AT AUGUST 31, 1920.

DESCRIPTION	THIS YEAR	
	Detail	Total
CASH ON HAND AND IN BANKS		
Revolving Funds:		
Treasurer's Office.....	250.00	
Comptroller's Office.....	5,500.00	
University Library.....	50.00	
Encina Hall.....	50.00	
Medical Library.....	40.00	
Sequoia Hall.....	50.00	
Lane and Stanford Hospitals.....	15,000.00	
University Storeroom.....	25.00	
Hopkins Marine Station.....	200.00	
Printing and Binding Department.....	20.00	
Roble Gymnasium.....	5.00	21,190.00
Cash in Bank—Commercial		
National Bank of Commerce—New York—Regular Account.....	8,305.67	
Union Trust Company—Regular Account.....	26,796.30	
Bank of Palo Alto—Regular Account.....	6,719.87	
Bank of California—Regular Account.....	5,304.22	
Wells Fargo Nevada National Bank—Regular Account.....	6,450.82	
First National Bank—Palo Alto—Regular Account.....	9,749.77	63,326.65
Total Cash on Hand and in Banks.....		84,516.65

SCHEDULE 14—ANALYSIS OF CURRENT ASSETS—Continued

ANALYSIS OF CURRENT ASSETS AS AT AUGUST 31, 1920—Continued.

DESCRIPTION	THIS YEAR	
	Detail	Total
ACCOUNTS RECEIVABLE		
Accounts Receivable:		
Comptroller.....	18,627.81	
Lane and Stanford Hospitals.....	34,763.40	
Vina Ranch.....	3,797.23	57,188.44
Rents Receivable:		
Comptroller.....		1,294.50
Interest Accrued:		
Comptroller.....		269,907.95
		328,390.89
Total Accounts Receivable.....		
Other Assets:		
Liberty Bonds—Employees.....	211.72	
Bonds—Employer's Liability Insurance Fund.....	44,638.08	
Bonds Received as Deposits.....	400.00	
Pension Fund.....	50,000.00	
Bond Premium and Discount Pension Fund.....	250.00	
Total Other Assets.....		94,999.80

SCHEDULE 14—ANALYSIS OF CURRENT ASSETS—Concluded
ANALYSIS OF CURRENT ASSETS AS AT AUGUST 31, 1920—Concluded.

DESCRIPTION	THIS YEAR	
	Detail	Total
WORKING ASSETS		
General Stores:		
Crusher and Service Departments.....	6,533.35	
Supplies in Academic Departments.....	34,697.08	
Hay and Grain.....	2,099.24	
Comptroller—General.....	54,600.08	
Comptroller—Printing and Binding.....	2,460.07	
Lane and Stanford Hospitals.....	32,047.67	132,437.49
Merchandise:		
Medical School Dispensary.....		8,565.44
Prepaid Expenses:		
Unexpired Insurance.....	6,838.37	
Medical Department—Microscope Loan.....	1,540.26	8,378.63
Total Working Assets.....		149,381.56
DEFERRED CHARGES TO OPERATIONS		
Work in Process:		
Corporation Yard.....	14,799.69	
Printing and Binding Department.....	2,675.86	
Suspense.....		17,475.55
Total Deferred Charges to Operations.....		17,535.52
Total Current Assets.....		674,824.42

SCHEDULE 15—ANALYSIS OF CURRENT LIABILITIES
ANALYSIS OF CURRENT LIABILITIES AS AT AUGUST 31, 1920.

DESCRIPTION	THIS YEAR	
	Detail	Total
IMMEDIATE DEMANDS FOR CASH		
Pay Rolls Payable:		
Comptroller.....	21,812.87	21,812.87
Accounts Payable:		
Comptroller.....	44,064.61	
Lane and Stanford Hospitals.....	2,890.44	
Depositors:		
Comptroller.....	1,791.50	46,955.05
University Library.....	185.00	
Encina Hall.....	3,314.32	
Sequoia Hall.....	770.07	
Madrona Hall.....	5.00	
Engineering Group of Academic Departments.....	35.00	
Lane and Stanford Hospitals.....	368.25	
Encina Gymnasium.....	400.43	
Roble Hall.....	2,311.28	
School of Medicine.....	230.00	9,410.85
Student Organizations:		
Associated Students.....	422.51	
Students' Guild.....	413.72	
Stanford Women's Club.....	57.26	
Stanford Union.....	41.71	
Board of Athletic Control.....	1,334.68	
Encina Club.....	338.24	
Roble Club.....	199.00	
Sequoia Club.....	342.55	3,149.67
Total Immediate Demands for Cash.....		81,328.44
Due to Investment Funds.....		375,957.53

SCHEDULE 15—ANALYSIS OF CURRENT LIABILITIES—Continued
ANALYSIS OF CURRENT LIABILITIES AS AT AUGUST 31, 1920—Continued.

DESCRIPTION	THIS YEAR	
	Detail	Total
OTHER LIABILITIES		
Unappropriated Income—Scholarship Funds:		
W. J. Dickey Scholarship.....	29.98	
C. F. Elwell Scholarship.....	800.00	
Wilmer J. Gross Scholarship.....	350.00	
Bertha Hyde Braley Scholarship.....	125.00	
Gertrude Gardner Scholarship.....	66.70	
Mrs. Jeanne R. Reuiller Scholarship.....	80.00	
Dorothy Metz Scholarship.....	66.70	
Ernest W. Love Scholarship.....	50.00	
Ira S. Lillick Scholarship.....	500.00	
Mrs. Ira S. Lillick Scholarship.....	500.00	
		2,568.38
Unappropriated Income—Special Contributions for Current Purposes:		
Mrs. H. C. Hoover Research Fund.....	188.25	
Research Fund in Oriental Diseases.....	499.45	
Sperry Flour Company Research Fund.....	750.00	
Insulator Test Fund.....	531.11	
United States Social Hygiene Board Fund.....	3,710.46	
Dr. A. Barkan—Medical Library Books.....	1,003.66	
Henry Gibbons Jr. Library of Obstetrics and Gynec.....	295.96	
Jewel Fund—Books.....	4,008.90	
Lane Medical Lecture Fund.....	875.36	
C. G. Lathrop Books on California.....	176.88	
		12,040.03
Amount Forwarded.....		

SCHEDULE 15—ANALYSIS OF CURRENT LIABILITIES—Concluded
ANALYSIS OF CURRENT LIABILITIES AS AT AUGUST 31, 1920—Concluded.

DESCRIPTION	THIS YEAR	
	Detail	Total
	Amount Forwarded.....	
Lane Medical Library Sundry Endowments.....	12,040.03	
J. H. Meyer—In Memory of A. Borel.....	10.79	
T. W. Stanford—Psychic Investigation.....	753.26	
T. W. Stanford—Psychic Literature.....	1,421.07	
R. F. West—Lecture on Immortality, etc.....	401.94	
T. J. Hoover—Fellowship in Mining.....	920.44	
Research Fund in Wood Distillation.....	200.00	
Dr. Cooper Research Fund.....	380.00	
California Packing Co.—Study in Botulism.....	1,110.00	
Research Fund in Oil Industry.....	1,015.41	
N. E. L. A. Insulator Test Fund.....	5,830.53	
	518.01	24,601.48
		27,169.86
Total Unappropriated Income (Schedule 25).....		
Loan and Relief Funds (Schedule 26):		
Alumni Graduate Student Loan Fund.....	30.00	
William Burton Barber Loan Fund.....	2,424.80	
Horace Davis Student Loan Fund.....	626.82	
Harker School Loan Fund.....	225.00	
Medical Faculty Relief Fund.....	200.00	
Women's Student Loan Fund.....	252.59	
Associated Students' Loan Fund.....	75.00	
Stanford Alumni Association Undergraduate Loan Fund.....	320.00	4,154.21
Hospital Special Funds (Schedule 25):		
Unclaimed Deposits:		
Lane and Stanford Hospitals.....		3,241.50
Deferred and Contingent Liabilities.....		2,989.61
		18,128.99
		55,684.17
Total Other Liabilities.....		

SCHEDULE 16—ANALYSIS OF INCOME
ANALYSIS OF INCOME FOR YEAR ENDING AUGUST 31, 1920.

DESCRIPTION	THIS YEAR
Income From Securities:	
Interest on Bonds.....	843,794.92
Dividends on Corporate Stock (Schedule 8)	10,450.00
Interest on Mortgage Loans.....	92,592.76
Interest on Loans—Campus Buildings.....	5,404.77
Interest on Unsecured Loans.....	1,712.84
Income from Other Securities.....	1,031.52
Interest on Contracts of Sale.....	61,548.93
Total.....	1,016,535.74
Income From Real Estate:	
Income from Real Estate—City.....	16,155.04
Income from Real Estate—Country.....	32,406.29
Total.....	48,561.33
Income From Other Investment Assets:	
Interest on Daily Bank Balances.....	5,750.13
Total.....	5,750.13
Income From Special and Endowment Funds (Schedule 25)	54,639.98
Income From Academic Sources:	
Tuition Fees—General.....	148,382.70
Tuition Fees—Law.....	22,973.25
Tuition Fees—Medical.....	7,479.70
Amount Forwarded.....	178,835.65

SCHEDULE 16—ANALYSIS OF INCOME—Continued
ANALYSIS OF INCOME FOR YEAR ENDING AUGUST 31, 1920—Continued.

DESCRIPTION	THIS YEAR
Incidental Fees.....	178,835.65
Laboratory Fees—University.....	68,507.76
Roble Gymnasium Fees.....	60,933.63
Diploma Fees.....	9,907.08
University Libraries.....	2,435.00
Laboratory Fees—Hopkins Marine Station.....	786.82
Other Income from Academic Sources.....	600.09
	3,719.94
Total.....	325,725.88
Income From Dormitories and Residences:	
Encina Hall.....	34,898.20
Roble Hall.....	25,142.00
Sequoia Hall.....	8,128.55
Alvarado Hall.....	968.50
Residences.....	36,474.25
Schedule 20 for Net Total.....	105,611.50
Income From Sales:	
Arboretum Wood.....	2,355.99
Nursery.....	2,712.25
Palo Alto Farm.....	3,529.02
Steam.....	682.80
Rock Crusher.....	2,927.20
Printing and Binding.....	66,957.37
Amount Forwarded.....	79,164.53

REPORT OF THE PRESIDENT

SCHEDULE 16—ANALYSIS OF INCOME—Concluded ANALYSIS OF INCOME FOR YEAR ENDING AUGUST 31, 1920—Concluded.

DESCRIPTION	THIS YEAR
Medical School Dispensary.....	79,164.53
Animal Farm.....	31,825.48
	62.70
Schedule 20 for Net Total.....	111,052.81
Income From Other Sources:	
Museums.....	1,654.00
Assembly Hall.....	645.25
Water Supply System.....	6,328.35
Stanford Medical School (Schedule 17).....	19,796.36
Lane and Stanford Hospitals (Schedule 17).....	480,655.84
Lane Medical Library.....	3,000.00
Gas Pipe Line Rentals.....	789.60
Discounts on Purchases.....	2,046.41
Otherwise Unclassified.....	98.50
Total.....	515,014.31
Less Income Appropriated to Special and Endowment Funds (Schedule 25).....	2,182,891.68
Total Income.....	42,043.78
Total Net Income.....	2,140,847.90

SCHEDULE 17—STATEMENT OF INCOME AND EXPENSES
STATEMENT OF INCOME AND EXPENSES FOR YEAR ENDED AUGUST 31, 1920

HOSPITALS		THIS YEAR
Income: Stanford Hospital—Private Patients.....		322,027.90
Clinic Patients.....		17,735.73
Total.....		339,763.63
Lane Hospital—Private Patients.....		59,871.52
Clinic Patients.....		80,360.69
Total.....		140,232.21
School For Nurses—Tuition Fees.....		660.00
Total.....		660.00
Total Income—Hospitals.....		480,655.84
Expenses: Administrative and General.....		36,832.73
Professional Care of Patients.....		128,040.95
School for Nurses.....		9,455.13
Housekeeping.....		48,977.23
Laundry.....		19,453.12
Commissary.....		198,832.36
General House and Property Expenses.....		77,558.89
Direct Expenses—Hospital.....		519,150.41
Pro Rata (Charges).....		6,122.23
Total Charges.....		525,272.64
Less: Pro Rata (Credits).....		16,848.62
Total Net Expense—Hospitals.....		508,424.02
Income Over Expenses—Hospitals.....		27,768.18

SCHEDULE 17—STATEMENT OF INCOME AND EXPENSES—Concluded
STATEMENT OF INCOME AND EXPENSES FOR YEAR ENDED AUGUST 31, 1920—Concluded.

HOSPITALS		THIS YEAR
MEDICAL SCHOOL INCOME:		
Educational		
Tuition Fees.....		8,802.00
Special Fees.....		131.75
Dental Fees.....		327.10
Other Income.....		10,535.51
Total.....		19,796.36
DISPENSARY:		
Sales.....		31,825.48
Total.....		31,825.48
Total Income—Medical School.....		51,621.84
EXPENSES:		
Educational		
Dispensary.....		120,206.70
Direct Expenses—Medical School.....		23,404.06
Pro Rata (Charges).....		143,610.76
		8,262.15
Total Expenses.....		151,872.91
Expenses Over Income—Medical School.....		100,251.07
Expenses Over Income—Medical Division.....		128,019.25

SCHEDULE 18—ANALYSIS OF EXPENDITURES
ANALYSIS OF EXPENDITURES FOR YEAR ENDING AUGUST 31, 1920.

DESCRIPTION	Total	Expense	Capital
Administrative and General:			
Executive Offices.....	115,780.96	115,158.46	622.50
Other General Offices.....	27,520.05	27,520.05	
General Accounts.....	248,982.31	229,436.84	19,545.47
Total.....	392,283.32	372,115.35	20,167.97
Instruction and Research—Schools and Departments:			
School of Medicine.....	167,857.12	167,857.12	
School of Law.....	39,290.84	39,290.84	
School of Education.....	38,392.33	38,007.33	385.00
Engineering Group.....	141,872.22	135,227.43	6,644.79
Biological Group.....	113,727.62	110,756.00	2,971.62
Languages—Ancient and Modern.....	116,395.47	116,345.47	50.00
History, Economics and Political Science.....	70,953.92	70,953.92	
Mathematics, Physics and Chemistry.....	118,872.63	116,481.45	2,391.18
Psychology and Philosophy.....	22,214.00	22,214.00	
Total.....	829,576.15	817,133.56	12,442.59
Independent Departments and Divisions:			
Libraries.....	76,651.42	51,131.30	25,520.12
Gymnasium.....	19,301.92	19,185.17	116.75
Museums.....	7,469.85	7,120.05	349.80
Hopkins Marine Station.....	2,878.17	1,362.62	1,515.55
Memorial Church.....	13,514.07	13,514.07	
Hospitals.....	513,546.86	508,424.02	5,124.84
Military Training.....	3,594.80	3,380.51	214.29
Dormitories.....	45,333.32	45,713.07	379.75
Assembly Hall.....	834.62	834.62	
Total.....	683,125.03	650,665.43	32,459.60

SCHEDULE 18—ANALYSIS OF EXPENDITURES—Concluded
ANALYSIS OF EXPENDITURES FOR YEAR ENDING AUGUST 31, 1920—Concluded.

DESCRIPTION	Total	Expense	Capital
Operating and Maintenance of Educational Plant:			
Repairs to Buildings, Structures and Improvements.....	74,898.18	74,898.18	
Maintenance of Grounds.....	54,376.02	54,376.02	
Janitors.....	27,178.89	27,178.89	
Watchmen.....	8,744.22	8,744.22	
Total.....	165,197.31	165,197.31	
Service Departments:			
Reserved for New Press Equipment.....	5,808.54	5,808.54	
Printing and Binding.....	55,111.38	54,648.83	462.55
Stores Keeping.....	7,806.86	7,806.86	
Rock Quarry.....	2,926.36	2,926.36	
Power Plant.....	53,077.69	53,077.69	
Corporation Yard.....	30,198.71	4,291.58	25,907.13
Mimeograph and Stenographic Bureau.....	148.84	43.34	105.00
Water Supply System.....	9,149.71	8,697.61	452.10
Fire Department.....	3,304.81	3,304.81	
Electric Lighting System.....	4,086.52	1,006.06	3,080.46
Total.....	171,619.42	141,612.18	30,007.24
Investment Enterprises:			
Real Estate—Country.....	22,679.28	22,679.28	
Real Estate—City.....	4,807.49	4,807.49	
Real Estate—Campus.....	25,749.44	25,749.44	
Total.....	53,236.21	53,236.21	
Total Expenditures.....	2,295,037.44	2,199,960.04	95,077.40
ANALYSIS OF CAPITAL EXPENDITURES			
Educational Plant:			
Land and Land Improvements.....			15,579.34
Buildings and Structures.....			10,040.77
Improvements.....			69,261.17
Equipment.....			196.12
Unsegregated.....			
Total.....			95,077.40

SCHEDULE 19—ANALYSIS OF EXPENDITURES
ANALYSIS OF EXPENDITURES FOR YEAR ENDING AUGUST 31, 1920.

DESCRIPTION	Total	Expense	Capital
ADMINISTRATIVE AND GENERAL			
Executive Offices:			
Board of Trustees.....	420.73	420.73	
President's Office.....	25,093.73	25,093.73	
Treasurer's Office.....	8,915.00	8,915.00	
Registrar's Office.....	30,453.83	30,453.83	
Comptroller's Office.....	40,813.52	40,191.02	622.50
Legal Counsel.....	2,754.13	2,754.13	
Superintendent's Office (now abolished).....	7,330.02	7,330.02	
Total.....	115,780.96	115,158.46	622.50
Other General Offices:			
Academic Secretary.....	1.25	1.25	
Appointment Secretary.....	7,277.21	7,277.21	
Publication Committee.....	3,355.97	3,355.97	
Public Exercise Committee.....	3,390.16	3,390.16	
Dean of Men.....	6,238.17	6,238.17	
Dean of Women.....	4,084.33	4,084.33	
Lower Division.....	811.44	811.44	
Alumni Secretary.....	2,361.52	2,361.52	
Total.....	27,520.05	27,520.05	

SCHEDULE 19—ANALYSIS OF EXPENDITURES—Continued
ANALYSIS OF EXPENDITURES FOR YEAR ENDING AUGUST 31, 1920—Continued.

DESCRIPTION	Total	Expense	Capital
General Accounts:			
Insurance.....	9,457.57	9,457.57	
Interest.....	1,508.81	1,508.81	
Light and Gas.....	4,432.77	4,432.77	
Publicity.....	1,448.05	1,448.05	
Telephone and Telegraph.....	921.44	921.44	
Taxes.....	7,152.26	7,152.26	
University Scholarships.....	6,312.71	6,312.71	
Debt Service (Liquidation Building Fund Loan).....	150,000.00	150,000.00	
Liability Insurance.....	5,000.00	5,000.00	
General Expense.....	5,829.26	5,829.26	
Auditing and Accounting System Cost.....	33,048.17	33,048.17	
Convention Traveling Expenses and Membership Dues.....	4,325.80	4,325.80	
Total.....	229,436.84	229,436.84	
Total Administrative and General.....	372,737.85	372,115.35	622.50
INSTRUCTION AND RESEARCH—SCHOOLS AND DEPARTMENTS			
School of Medicine:			
Medical School—San Francisco.....	128,468.85	128,468.85	
Medical School—San Francisco—Gifts for Specific Research.....	15,984.21	15,984.21	
Medical School Dispensary.....	23,404.06	23,404.06	
Total.....	167,857.12	167,857.12	

SCHEDULE 19—ANALYSIS OF EXPENDITURES—Continued

ANALYSIS OF EXPENDITURES FOR YEAR ENDING AUGUST 31, 1920—Continued				
DESCRIPTION	Total	Expense	Capital	
School of Law:				
Administration	39,290.84	39,290.84		
Law School.....				
Total.....	39,290.84	39,290.84		
School of Education:				
Administration	38,392.33	38,007.33	385.00	
School of Education.....				
Total.....	38,392.33	38,007.33	385.00	
Engineering Group:				
Administration	31,185.66	29,868.26	1,317.40	
Civil Engineering.....	12,315.77	12,068.92	246.85	
Electrical Engineering.....	50,165.45	47,176.77	2,988.68	
Mechanical Engineering.....	20,329.03	20,329.03		
Mining and Metallurgy.....	27,876.31	25,784.45	2,091.86	
Geology.....				
Total.....	141,872.22	135,227.43	6,644.79	
Biological Group:				
Administration	17,852.78	17,832.53	20.25	
Bacteriology.....	22,599.07	22,599.07		
Botany.....	9,390.34	9,390.34		
Entomology.....	23,112.53	23,112.53		
Zoology.....	26,798.12	23,846.75	2,951.37	
Anatomy.....	13,974.78	13,974.78		
Physiology.....				
Total.....	113,727.62	110,756.00	2,971.62	

SCHEDULE 19—ANALYSIS OF EXPENDITURES—Continued
ANALYSIS OF EXPENDITURES FOR YEAR ENDING AUGUST 31, 1920—Continued

DESCRIPTION	Total	Expense	Capital
Languages—Ancient and Modern:			
Administration			
English.....	47,918.56	47,918.56	
German.....	18,634.44	18,634.44	
Greek.....	9,115.87	9,115.87	
Latin.....	8,953.97	8,953.97	
Romanic.....	30,909.28	30,859.28	50.00
Slavic.....	863.35	863.35	
Total.....	116,395.47	116,345.47	50.00
History, Economics, and Political Science:			
Administration			
History.....	32,429.23	32,429.23	
Economics.....	27,189.56	27,189.56	
Political Science.....	11,335.13	11,335.13	
Total.....	70,953.92	70,953.92	
Mathematics, Physics and Chemistry:			
Administration			
Applied Mathematics.....	19,481.99	19,481.99	
Mathematics.....	15,293.37	15,293.37	
Physics.....	21,201.58	19,595.86	1,605.72
Chemistry.....	62,895.69	62,110.23	785.46
Total.....	118,872.63	116,481.45	2,391.18

SCHEDULE 19—ANALYSIS OF EXPENDITURES—Continued
ANALYSIS OF EXPENDITURES FOR YEAR ENDING AUGUST 31, 1920—Continued.

DESCRIPTION	Total	Expense	Capital
Psychology and Philosophy:			
Administration	14,100.12	14,100.12	
Psychology.....	8,113.88	8,113.88	
Philosophy.....			
Total.....	22,214.00	22,214.00	
Total Instruction and Research.....	829,576.15	817,133.56	12,442.59
INDEPENDENT DEPARTMENTS AND DIVISIONS			
Libraries:			
Administration	61,779.93	43,055.41	18,724.52
University Libraries.....	14,871.49	8,075.89	6,795.60
Lane Medical Library.....			
Total.....	76,651.42	51,131.30	25,520.12
Gymnasiums:			
Administration	4,414.70	4,414.70	
Encina Gymnasium.....	14,887.22	14,770.47	116.75
Roble Gymnasium.....			
Total.....	19,301.92	19,185.17	116.75
Museums:			
University Museum.....	7,469.85	7,120.05	349.80
Total.....	7,469.85	7,120.05	349.80

SCHEDULE 19—ANALYSIS OF EXPENDITURES—Continued
ANALYSIS OF EXPENDITURES FOR YEAR ENDING AUGUST 31, 1920—Continued.

DESCRIPTION	Total	Expense	Capital
Hopkins Marine Station.....	2,878.17	1,362.62	1,515.55
Memorial Church.....	13,514.07	13,514.07	
Lane and Stanford Hospitals: Per Report of Medical Division (Schedule G).....	513,546.86	508,424.02	5,122.84
Military Training.....	3,594.80	3,380.51	214.29
Dormitories:			
Administration.....	26,243.51	26,243.51	
Encina Hall.....	13,217.10	13,596.85	379.75
Roble Hall.....	4,678.78	4,678.78	
Sequoia Hall.....	1,193.93	1,193.93	
Alvarado Hall.....			
Total.....	45,333.32	45,713.07	379.75
Assembly Hall.....	834.62	834.62	
Total Independent Departments and Divisions.....	683,125.03	650,665.43	32,459.60
OPERATION AND MAINTENANCE OF EDUCATIONAL PLANT			
Repairs to Buildings, Structures and Improvements.....	74,898.18	74,898.18	
Repairs to Equipment—Undistributed.....			
Maintenance of Grounds.....	54,376.02	54,376.02	
Janitors.....	27,178.89	27,178.89	
Watchman.....	8,744.22	8,744.22	
Total Operation and Maintenance of Educational Plant.....	165,197.31	165,197.31	

SCHEDULE 19—ANALYSIS OF EXPENDITURES—Concluded.

ANALYSIS OF EXPENDITURES FOR YEAR ENDING AUGUST 31, 1920—Concluded.

DESCRIPTION	Total	Expense	Capital
SERVICE DEPARTMENTS			
Reserved for New Press Equipment.....	5,808.54	5,808.54	
Printing and Binding.....	55,111.38	54,048.83	462.55
Stores Keeping.....	7,806.86	7,806.86	
Rock Quarry.....	2,926.36	2,926.36	
Power Plant.....	53,077.69	53,077.69	
Corporation Yard.....	30,198.71	4,291.58	25,907.13
Mimeograph and Stenographic.....	148.84	43.84	105.00
Water Supply System.....	9,149.71	8,697.61	452.10
Fire Department.....	3,304.81	3,304.81	
Electric Lighting System.....	4,086.52	1,006.06	3,080.46
Total Service Department.....	171,619.42	141,612.18	30,007.24
INVESTMENT ENTERPRISES			
Real Estate—Country.....	22,679.28	22,679.28	
Real Estate—City.....	4,807.49	4,807.49	
Real Estate—Campus.....	25,749.44	25,749.44	
Total Investment Enterprises.....	53,236.21	53,236.21	

REPORT OF THE PRESIDENT

SCHEDULE 20—COMPARATIVE STATEMENT OF OPERATIONS
COMPARATIVE STATEMENT OF OPERATIONS OF INCOME SECTION—EDUCATIONAL PLANT UNITS FOR YEAR ENDING
AUGUST 31, 1920.

	12 Months Ending August 31, 1920	Net Income
DORMITORIES AND RESIDENCES		
Encina Hall:		
Income.....		34,898.20
Expenses.....		
Salaries.....	13,898.19	
Office Supplies and Expenses.....	55.80	
Telephone and Telegraph.....	167.48	
Materials and Supplies.....	9,824.51	
Maintenance and Repairs.....	1,173.19	
Insurance.....	1,020.00	
Other Direct Expenses.....	182.78	26,243.51
Prorat. and Distrib. Charges and Credits.....	78.44	11,936.73
Repairs to Building.....		
Total Expenditures.....		38,180.24
Net Income—Encina Hall.....		3,282.04

SCHEDULE 20—COMPARATIVE STATEMENT OF OPERATIONS—Continued
COMPARATIVE STATEMENT OF OPERATIONS OF INCOME SECTION—EDUCATIONAL PLANT UNITS FOR YEAR ENDING
AUGUST 31, 1920—Continued.

	Net Income	
	12 Months Ending August 31, 1920	Net Income
Roble Hall:		
Income.....		25,142.00
Expenses.....		
Salaries.....	9,254.35	
Office Supplies and Expenses.....	34.75	
Telephone, Telegraph and Postage.....	100.39	
Materials and Supplies.....	4,028.36	
Maintenance and Repairs.....	179.00	13,596.85
Repairs to Building.....		2,249.72
Total Expenditures.....		15,846.57
Net Income—Roble Hall.....		9,295.43
Sequoia Hall:		
Income.....		8,128.55
Expenses.....		
Salaries.....	2,826.73	
Office Supplies and Expenses.....	20.75	
Telephone and Telegraph.....	73.40	
Material and Supplies.....	959.15	
Maintenance and Repairs.....	393.50	
Insurance.....	405.25	4,678.78
Repairs to Buildings.....		3,256.23
Total Expenditures.....		7,935.01
Net Income—Sequoia Hall.....		193.54

SCHEDULE 20—COMPARATIVE STATEMENT OF OPERATIONS—Continued
COMPARATIVE STATEMENT OF OPERATIONS OF INCOME SECTION—EDUCATIONAL PLANT UNITS FOR YEAR ENDING
AUGUST 31, 1920—Continued.

	Net Income 12 Months Ending August 31, 1920		Compared with Required Income to Meet Endowment Provisions	Gain or Deficit over Requirements
Alvarado Hall:				
Income.....				
Expenses.....				
Salaries.....	330.60			
Telephone.....	3.75			
Material and Supplies.....	547.64			
Maintenance and Repairs.....	161.94			
Rent.....	150.00	1,193.93		
Total Expenditures.....		1,193.93		
Net Income—Alvarado Hall.....		225.43		
Total Net Income—Dormitories.....		5,981.50	15,000.00	9,018.50
Residences:				
Income.....				
Maintenance and Repairs.....				
Depreciation.....				
Total Expenses.....				
Net Income—Residences.....			12,720.16	7,995.35
Total Net Income Dormitories and Residences.....		10,706.31	27,720.16	17,013.85

SCHEDULE 20—COMPARATIVE STATEMENT OF OPERATIONS—Continued
COMPARATIVE STATEMENT OF OPERATIONS OF INCOME SECTION—EDUCATIONAL PLANT UNITS FOR YEAR ENDING
AUGUST 31, 1920—Continued.

	Net Income 12 Months Ending August 31, 1920		Compared with Required Income to Meet Endowment Provisions	Gain or Deficit over Requirements
Forward.....				
Water Supply System:				
Income.....		10,706.31	27,720.16	17,013.85
Expenses.....		6,328.35		
Salaries.....	3,827.68			
Materials and Supplies.....	1,662.72			
Maintenance and Repairs.....	3,207.21			
Total Expenses.....		8,697.61		
Net Income—Water Supply System.....		2,369.26	4,534.75	6,904.01
Electric Railway:				
Income (no expenses).....		2,328.33	1,946.20	382.13
Gas Pipe Line Rental.....		789.60	406.36	383.24
Subdivision Improvements:				
Income.....		11,932.25		
Expenses.....		1,006.06		
Net Income.....		10,926.19	3,542.58	7,383.61
Stanford Hospital:				
Income.....		340,093.63		
Expenses.....		304,338.12 *		
Net Income.....		35,755.51	29,394.23	6,361.28
Total Income of Income Section Educational Plant.....		58,136.68	67,544.28	9,407.60

*No Depreciation Provided

SCHEDULE 20—COMPARATIVE STATEMENT OF OPERATIONS—Continued

STATEMENT OF OPERATIONS OF VARIOUS UNITS, YEAR ENDING AUGUST 31, 1920—Continued.

STATEMENT OF OPERATIONS OF VARIOUS UNITS, YEAR ENDING AUGUST 31, 1920—Continued.			12 months ending Aug. 31, 1920
OTHER UNITS			
Arboretum Wood:			
Income.....			2,355.99
Expenses.....			2,516.76
	Net Income.....		160.77
Nursery:			
Income.....			2,712.25
Expenses.....			5,413.06
	Net Income.....		2,700.81
Rock Crusher:			
Income.....			2,927.20
Expenses.....			
Salary.....		2,053.80	
Supplies and Expenses.....		409.90	
Repairs.....		462.66	
Depreciation.....			
	Total Expenses.....		2,926.36
	Net Income.....		.84
Animal Farm:			
Income.....			62.70
Expenses.....			
Salaries.....		350.00	
Material and Supplies.....		362.04	
	Total Expenses.....		712.04
	Net Income.....		649.34

SCHEDULE 20—COMPARATIVE STATEMENT OF OPERATIONS—Concluded

STATEMENT OF OPERATIONS OF VARIOUS UNITS, YEAR ENDED AUGUST 31, 1920—Concluded. 12 months ending Aug. 31, 1920

Assembly Hall:		
Income.....		645.25
Expenses.....		
Salaries.....	111.35	
Material and Supplies.....	427.56	
Maintenance and Repairs.....	295.71	
Total Expenses.....		834.62
Net Income.....		189.37
University Press:		
Sales.....		66,957.37
Expenses.....		
Salaries and Other Charges.....	51,035.12	
Depreciation.....	3,613.71	
Total Expenses.....		54,648.83
Net Income.....		12,308.54
Less: Amount Reserved for New Press Equipment.....		5,808.54
Net Amount Carried as Income.....		6,500.00

REPORT OF THE PRESIDENT

ANALYSIS OF JOB DEPARTMENT OPERATIONS UNIVERSITY PRESS SCHEDULE 20—ANALYSIS OF JOB DEPARTMENT OPERATIONS UNIVERSITY PRESS ANALYSIS OF JOB DEPARTMENT OPERATIONS UNIVERSITY PRESS 12 MONTHS ENDING AUGUST 31, 1920.

Account Number	DESCRIPTION	12 Months to Date	
		THIS YEAR	
14320	Work in Process—First of Period	1,959.30	
800100	Stock Consumed	12,408.65	
800200	Machine Composition	4,340.22	
800300	Composing Room	6,898.59	
800400	Job Press	4,940.94	
800500	Cylinder Press	708.70	
800600	Bindery—Men, Machine	4,660.74	
800700	Bindery—Men, Hand		
800800	Bindery—Girls, Machine	1,904.34	
800900	Bindery—Girls, Hand		
801000	Cost of Completed Work, Sept. 1 to Dec. 31, 1919	15,814.94	
801100	Reserve for New Equipment and Alterations	5,808.54	
801200	Offices and General Expense	3,688.27	
	Total	63,133.23	
14320	Work in Process—End of Period	2,675.86	
801600	Cost of Completed Work	60,457.37	
170061	Sales	66,957.37	
	Operating Gain	6,500.00	

SCHEDULE 21—SURPLUS ANALYSIS

SURPLUS ANALYSIS YEAR ENDED AUGUST 31, 1920.

CURRENT SURPLUS AT FIRST OF PERIOD, AUGUST 31, 1919				115,807.12
Adjustment of Current Surplus—Credits				
Deposit Adjustments:				
Thesis Deposit of J. S. Boyce set up from earnings April and July, 1917.....	50.00			
Charging off Room Guaranty Deposit, 1919.....	574.95	624.95		
Less:				
Refund Bone Deposits formerly in Earnings.....	100.00			
Encina Hall Adjustment of Deposit Accounts.....	49.86			
Sequoia Hall Adjustment of Deposit Accounts.....	113.00			
Roble Hall Adjustment of Deposit Accounts.....	15.00	277.86	347.09	
Miscellaneous Income Prior Year Adjustment:				
Appropriating unexpended balances on Special Endowment Funds not taken into income 8/31/19.....	1,588.32			
To charge U. S. Social Hygiene Fund with 1918-19 expenditure.....	629.38			
Pacific Improvement Co., Dividends declared May 10, 1918, Div. No. 32 this portion being from Earnings.....	13,733.36			
Miscellaneous Income Encina Hall, 1918.....	84.50			
Sale of Rifle originally charged to general expense.....	17.50			
Sale of Miscellaneous Scrap from Corporation Yard and various places during year.....	2,417.61	18,470.67		
Less:				
Adjust expenditures on Gibbons Fund 1918-19.....	5.08			
Re-establish Henry Gibbons Library Fund appropriated in error 7/31/17.....	254.33	259.41	18,211.26	
Amount Forwarded.....			18,558.35	115,807.12

SCHEDULE 21—SURPLUS ANALYSIS—Continued

SURPLUS ANALYSIS YEAR ENDED AUGUST 31, 1920—Continued.

Inventory Adjustment:	Forward.....				115,807.12
To establish an account for the value of Medical School Dispensary Inventory, 8/31/19.....		8,441.43		18,558.35	
To write up book value of General Stores Inventory, 8/31/20.....					
Inventory.....	54,600.08				
Book.....	41,912.25	12,687.83		21,129.26	
Vina Ranch Adjustment:					
Claims allowed by S. P. Ry. Shipment of Wool.....	105.02				
Income Year ended 10/31/19.....	185,972.42				
Wilson & Wilson, Attorney Fees charged to cost of sale Improvements written off to Reserve for Farm Improvements 1913-18.....	3,500.00				
Sale to Stanford Ranch Co. of 65 gals. gasoline left at Vina.....	418,351.62				
Taxes 1919-20 Charged to Purchasers.....	39.00				
Taxes—Additional Charge to Geo. Vogelsang.....	3,808.49	611,859.66			
Less:	83.11				
1919-20 Taxes charge to Ranch Operation.....	4,240.54				
Credit to Gorrill, Jones & Van Loben Sels Overcharge Sheep Camp.....	68.35	4,308.89		607,550.77	
Palo Alto Farm Adjustment—Net Income Year Ended 8/31/19.....					
U. S. Government Paid Claim for Damage and Cancellation of Lease.....				20,911.84	
S. A. T. C. (Navy Unit) Payment of Housing and Subistence Claim.....				10,157.37	
Forward.....				1,397.20	
				679,704.79	115,807.12

SCHEDULE 21—SURPLUS ANALYSIS—Continued
SURPLUS ANALYSIS YEAR ENDED AUGUST 31, 1920—Continued.

Forward.....					115,807.12
Miscellaneous Credits					
Refund Butte County Taxes, Dec., 1919.....				679,704.79	
Current Surplus as Affected by Deferred Charges.....				26.70	
Transferred from Reserve for Contingencies Absorbing Deficit.....				144,457.05	
				19,111.56	
Total Credits.....					843,300.10
Adjustment of Current Surplus—Debits					
Adjustment Fee Collection Prior Year:					
Associated Students not credited with 1919 fees.....	74.03				
Stanford Women's Club not credited with 1919 fees.....	35.15				
Student Bodies Share of 1919 S. A. T. C. Fees.....	2,556.00				
Refunds to S. A. T. C. Students.....	142.75		2,807.93		
Less:					
Students' Guild Adjustment 1919 Fees.....	960.24				
Stanford Union Adjustment 1919 Fees.....	491.85		1,452.09		
Board of Athletic Control Adjustments:					
1/5 of Fees Year 1918-19 to Loan Account.....	1,355.66				
To establish current account of indebtedness 8/31/19 to Board.....	2,618.36				
To adjust 1919 charge for electricity.....	1.41		3,975.43		
Forward.....			3,975.43		
				1,355.84	
					843,300.10
					115,807.12

SCHEDULE 21—SURPLUS ANALYSIS—Continued

SURPLUS ANALYSIS YEAR ENDED AUGUST 31, 1920—Continued.

Forward.....					115,807.12
Less:					
Items taken into Expense, August, 1919.....		3,975.43		1,355.84	843,300.10
Re-establishment of 1916 Insulator Test Fund.....		19.70		3,955.73	
Credited in 1918 to Expense, should remain Unappropriated.				603.03	
To Reconcile Difference in Hospital and General Books, 8/31/19.....					
To Adjust University Wages Payable 8/31/19.....				1,071.83	
To Adjust Hospital Fee Earnings March, 1919.....				1,100.80	
To Adjust Interest Contracts of Sale August, 1919.....				383.00	
Building Fund Loan Adjustment:				2,077.93	
Transfer of Surplus to Building Fund.....	500,000.00				
Transfer of Items Charged in Error April, 1919.....	107.32				
Transfer of Expense Moving Museum Dome.....	877.54				
Less: Overcredit to Loan, 1918.....		500,984.86			
		1,213.61		499,771.25	
Reserve:					
Reserve for Pension Fund Trustee's Resolution, 1/30/20.....		50,000.00			
Reserve for Bad Debts at University, 1918.....	1,213.61				
Less: Collection on Bad Debts Written off.....	467.87			50,745.74	
To Write Off Value of Encina Hall and P.-O. Furniture.....				5,407.94	
Interest Adjustments—Error in Accruals, 8/31/19.....					
Mortgage Loans—A. F. Rogers.....	30.23				
Mortgage Loans—T. H. Ramsey, paid 8/30/19 before accrual.....	3,300.00				
Mortgage Loans—Geo. H. Noble.....	9.42				
Mortgage Loans—Phi Gamma.....	6.00				
Forward.....	3,345.65			566,473.09	843,300.10
					115,807.12

SCHEDULE 21—SURPLUS ANALYSIS—Concluded
SURPLUS ANALYSIS YEAR ENDED AUGUST 31, 1920—Concluded.

Forward.....	3,345.65		566,473.09	843,300.10	115,807.12
Mortgage Loans—L. H. Sly, excess of payment 5/1/19 to 8/31/19 over interest required at 6% applied to loan principal.....	6,224.38				
Adjust Interest Gorrill, Jones & Van Lobon Sels Sheep Contract, 8/31/19.....	346.36	9,916.39			
Less:					
Interest Adjustments Made by K. B. Co. for 1919 Mortgage Loans.....	3,041.45				
Interest Adjustments " " " Bonds.....	405.23	3,446.68	6,469.71		
Miscellaneous Debits:					
Payment to Gertrude Gardner for provisions furnished S. A. T. C.....		60.84			
Rebate to Base Hospital of charge for screenings in 1918 as same was a gift.....		29.80			
Re-establish Seabury Fellowship, 1917-18—\$300 appropriated but expended only \$30.....		270.00	360.64	573,303.44	
Total Debits.....					269,996.66
Net Credit Adjustments.....					154,189.54
Surplus After Adjustments.....					154,189.54
Expenses in Excess of Income.....					000,000.00
Balance August 31, 1923.....					

SCHEDULE 22—EDUCATIONAL PLANT ASSETS

FOR YEAR ENDED AUGUST 31, 1920.

CAMPUS	August 31, 1919	Increase or Decrease	August 31, 1920
BUILDINGS AND STRUCTURES			
Educational Purposes:			
Outer Quadrangle.....	291,879.22		291,879.22
Natural Science Building.....	284,204.56		284,361.16
Assembly Hall and Old Library Building.....	214,150.86	156.60	214,150.86
Mechanical Engineering Building.....	144,419.20		144,419.20
Geological Laboratory.....	211,980.52		211,980.52
Inner Quadrangle.....	572,564.87		572,564.87
Artificial Stone Sidewalks.....	21,321.91		21,321.91
Quadrangle Gateways.....	1,444.00		1,444.00
Chemistry Building and Laboratory.....	233,664.87		233,664.87
Museum and Additions.....	563,073.29		563,073.29
Engineering Laboratory.....	52,327.38		52,327.38
Primary School.....	4,385.42		4,385.42
Class Building Alterations.....	9,918.18		9,918.18
Remodeling Museum.....	22,728.89		22,728.89
Metallurgy Laboratory.....	16,950.83		16,950.83
Hydraulic Laboratory.....	35,036.33		35,036.33
High Tension Laboratory.....	4,736.53		4,736.53
Alterations Applied Mathematics Building.....	51.87		51.87
New Library.....	766.90		766.90
Metallurgy Building Extension.....	14,295.86		14,295.86
Aerodynamic Laboratory.....	10,344.28		10,344.28
Alterations Philosophy Building.....	13,904.00		13,904.00
T. W. Stanford Art Gallery.....	89,305.91		89,305.91
Library Buildings.....	590,136.10	57,238.74	647,374.84
Assay Laboratory Alterations.....	10,536.54		10,536.54
Forward.....	3,414,128.32	57,395.34	3,471,523.66

SCHEDULE 22—EDUCATIONAL PLANT ASSETS—Continued
EDUCATIONAL PLANT ASSETS FOR YEAR ENDED AUGUST 31, 1920—Continued.

CAMPUS	August 31, 1919	Increase or Decrease	August 31, 1920
BUILDINGS AND STRUCTURES—Continued			
Forward.....	3,414,128.32	57,395.34	3,471,523.66
Bacteriological Laboratory Alterations.....	29,299.59		29,299.59
Marine Biological Laboratory.....	24,533.38		24,533.38
Chemical Laboratory Alterations.....	6,302.49		6,302.49
Military Buildings.....		14,814.12	14,814.12
Total.....	3,474,263.78	72,209.46	3,546,473.24
Recreational Purposes:			
Men's Gymnasium.....	110,457.29		110,457.29
Women's Gymnasium.....	6,701.17		6,701.17
Women's Swimming Pool.....	25,092.94		25,092.94
Band Stand.....	4,843.84		4,843.84
Total.....	147,095.24		147,095.24
General Purposes:			
Power House and Oil Cisterns.....	11,627.87		11,627.87
Forge and Foundry.....	8,273.75		8,273.75
Garbage Crematory.....	740.15		740.15
Fire Truck House.....	3,611.30		3,611.30
Store Room Construction.....	2,789.82		2,789.82
Transformer Vaults.....	373.75		373.75
Arcade Fire Walls.....	1,243.45		1,243.45
Machine Shop Extension.....	8,175.33		8,175.33
University Power House.....	66,982.46		66,982.46
New Forge and Foundry.....	27,677.72		27,677.72
Forward.....	131,495.60		131,495.60

SCHEDULE 22—EDUCATIONAL PLANT ASSETS—Continued
EDUCATIONAL PLANT ASSETS FOR YEAR ENDED AUGUST 31, 1920—Continued.

CAMPUS	August 31, 1919	Increase or Decrease	August 31, 1920
BUILDINGS AND STRUCTURES—Continued			
General Purposes:			
Forward.....	131,495.60		131,495.60
Electrical Sub-Station.....	39,439.44	120.00	39,559.44
Searsville Dam and Reservoir.....	4,660.16		4,660.16
Encina Hall.....	476,987.47		476,987.47
Sequoia Hall.....	73,990.81		73,990.81
President's House.....	145,330.34	630.09	145,960.43
Printing Shop.....	22,620.17		22,620.17
Water Development.....	8,872.32	13,070.45	21,942.77
Encina Hall Alterations.....		78,284.26*	78,284.23
Roble Hall.....		630.00	377,103.34
Sequoia Hall Alterations.....		376,473.34*	4,522.86
Total.....	903,396.31	473,731.00	1,377,127.31
Unclassified:			
Memorial Church.....	622,725.74		622,725.74
Memorial Court.....	5,851.58		5,851.56
Terrace.....	35,524.52		35,524.52
Main Entrance.....	970.15		970.15
Bronze Group Stanford Family.....	7,250.00		7,250.00
Mausoleum.....	12,168.88		12,168.88
Lagunita Fountain.....	1,027.05		1,027.05
Dwellings, Stores and Other Campus Buildings.....		11,475.53	271,052.63
Total.....	685,517.92	271,052.63	956,570.55

SCHEDULE 22—EDUCATIONAL PLANT ASSETS—Continued
EDUCATIONAL PLANT ASSETS FOR YEAR ENDED AUGUST 31, 1920—Continued.

CAMPUS	August 31, 1919	Increase or Decrease	August 31, 1920
IMPROVEMENTS			
Recreational:			
Football and Baseball Fields.....	2,000.00		2,000.00
Total	2,000.00		2,000.00
General:			
Inner Court.....	6,286.30		6,286.30
Retaining Wall.....	9,187.73		9,187.73
Bulkhead Palo Alto Tree.....	1,740.75		1,740.75
Surface Drainage System.....	4,783.25		4,783.25
Drainage.....	5,154.27		5,154.27
Tunnel.....	13,733.97		13,733.97
Sewerage.....	22,930.79		22,930.79
Levelling and Beautifying Inner Quadrangle.....	9,358.91		9,358.91
Quadrangle Gardens.....	1,380.64		1,380.64
University Roads, Walks, etc.....	163,228.67		163,319.94
Sidewalk Post Office to Roble Hall.....		2,091.27	
New Road past Zeta Psi.....		1,568.33	
Grounds back of New Library.....		35.66	
Electric Railroad.....		12.84	
		23.03	
Gas Pipe Line.....		38,899.21*	38,922.24
Campus Water System.....		8,127.22*	8,127.22
		452.10	
Campus Electric Power Line Extension.....		176,001.66*	176,453.76
Campus Lighting System.....		3,186.26*	3,186.26
		2,286.10	
		1,829.84*	4,115.94
Forward	237,785.28	234,513.52	472,298.80

SCHEDULE 22—EDUCATIONAL PLANT ASSETS—Continued
EDUCATIONAL PLANT ASSETS FOR YEAR ENDED AUGUST 31, 1920—Continued.

CAMPUS		August 31, 1914	Increase or Decrease	August 31, 1920
IMPROVEMENTS—Continued				
General:	Forward.....	237,785.28	234,513.52	472,298.80
Subdivision Lighting System.....			353.74*	353.74
Fire Protection.....			474.80*	474.80
Subdivision Water System.....			162.11	
			7,981.96*	8,144.07
Subdivision Surveying.....			1,167.85*	1,167.85
Subdivision Road and Walks.....			287.65	
			47,397.27*	47,684.92
Subdivision Sewerage.....			142.74	
			7,867.51*	8,010.25
	Total.....	237,785.28	300,349.15	538,134.43
Unclassified:			61.91	61.91
Curb at Mausoleum.....			61.91	61.91
	Total.....			
EQUIPMENT				
Educational:				
Incinerator (Anatomy and Bacteriology).....		579.11		579.11
Departmental Equipment.....		580,611.42	14,636.93*	595,248.35
Mechanician Shop Equipment.....		2,733.46		2,733.46
Library Books.....		579,978.12	18,724.52	598,702.64
New Library Building Equipment.....		10,983.60	31,494.86	42,448.46
Egyptian Curios.....		4,639.01		4,639.01
Japanese Curios.....		6,747.77		6,747.77
Museum Exhibits.....		1,054.99		1,404.79
Electric Lighting System.....			349.80	1,404.79
			794.36	794.36
	Total.....	1,187,297.48	66,000.47	1,253,297.95

SCHEDULE 22—EDUCATIONAL PLANT ASSETS—Continued
EDUCATIONAL PLANT ASSETS FOR YEAR ENDED AUGUST 31, 1920—Continued.

CAMPUS	August 31, 1919	Increase or Decrease	August 31, 1920
EQUIPMENT			
General:			
University Avenue Lighting System.....	7,442.58		7,442.58
Steam Heating Extension.....	933.83		933.83
Power House Equipment.....	73,578.12	10,495.52	84,073.64
Power House Electric Equipment.....	25,163.83		25,163.83
Treasurer's Office Furniture.....	283.26		283.26
Superintendent's Office Furniture.....	197.29		197.29
Store Room Furniture.....	370.22		370.22
Fire Truck House Equipment.....	1,111.95		1,111.95
Stanford University Press Equipment.....	33,997.23	462.55	34,459.78
President's House Furniture.....	34,854.78		34,854.78
Corporation Yard (General Yard).....		25,819.84	25,819.84
Corporation Yard (Blacksmith Shop).....		87.29	87.29
Total.....	177,933.09	36,865.20	214,798.29
Unclassified:			
Memorial Church Furniture.....	1,227.46		1,227.46
Total.....			
Unsegregated:			
Educational:			
Pacific Grove Laboratory and Grounds.....	8,756.60		8,756.60
Total.....			
General:			
Corporation Yards.....	50,646.36	196.12	50,842.48
Palo Alto Farm and Improvements.....	717,679.33	{ 34,441.15	879,245.36
		{ 127,124.88*	187,318.64
		187,318.64*	
Sundry Tracts Adjacent to Palo Alto Farm.....		349,080.79	1,117,406.48
Total.....	768,325.69		

• SCHEDULE 22—EDUCATIONAL PLANT ASSETS—Continued
EDUCATIONAL PLANT ASSETS FOR YEAR ENDED AUGUST 31, 1920—Continued.

SAN FRANCISCO		August 31, 1919	Increase or Decrease	August 31, 1920
LAND				
Educational:				
Lane Medical Library Lot.....	Total.....	9,080.00	9,553.66	18,633.66
BUILDINGS AND STRUCTURES				
Educational:				
Stanford University Hospital (New Wing).....		506,818.00	660.00	507,478.00
Medical Library Building.....		138,425.56		138,425.56
Nurses' Home.....			95.00	95.00
Lane Hospital.....			775.00	775.00
	Total.....	645,243.56	1,530.00	646,773.56
General:				
New Power House and Permanent Improvements Lane Hospital.....	Total.....	90,622.46		90,622.46
EQUIPMENT				
Educational:				
Stanford University Hospital Equipment.....		15,627.91		15,627.91
Medical Dept. S. F., Equipment and Apparatus.....		31,700.79		31,700.79
Lane Medical Library Furniture and Equipment.....		5,022.08		5,022.08
Lane Hospital Equipment and Apparatus.....		32,836.14	{ 5,122.84	38,831.13
			{ 872.15*	
New Wing, Lane Hospital.....		63,906.63		63,906.63
Lane Medical Library, Books and Periodicals.....		99,276.51	6,795.60	106,072.11
Barkan Fund Lane Library Books.....		3,510.32		3,510.32
New Nurses' Home Equipment.....		1,310.74		1,310.74
Radium.....			12,000.00*	
	Total.....	253,191.12	24,790.59	277,981.71

SCHEDULE 22—EDUCATIONAL PLANT ASSETS—Continued

EDUCATIONAL PLANT ASSETS FOR YEAR ENDED AUGUST 31, 1920—Continued.

SAN FRANCISCO		August 31, 1914	Increase or Decrease	August 31, 1920
General:				
San Francisco Office Furniture.....	Total.....	2,515.42		2,515.42
Unsegregated:				
Educational:				
Stanford University Medical School and Grounds.....		139,911.90		139,911.90
Medical Department New Lands and Buildings.....		167,029.39		167,029.39
	Total.....	306,941.29		306,941.29
	Total Educational Plant Assets.....	8,901,192.70	1,605,224.86	10,506,417.56
Less:				
Educational Plant Assets Transferred to Investment Section.....				2,247,273.02
	Total Educational Plant Assets (Schedule 10 and 11).....			8,259,144.54
SUMMARY				
Buildings and Structures, Educational Purposes.....		4,119,507.34	73,739.46	4,193,246.80
Buildings and Structures, Recreational Purposes.....		147,095.24		147,095.24
Buildings and Structures, General Purposes.....		994,018.77	473,731.00	1,467,749.77
Buildings and Structures, Unclassified.....		685,517.92	271,052.63	956,570.55
	Total Buildings and Structures.....	5,946,139.27	818,523.09	6,764,662.36
Land—Educational Purposes.....		9,080.00	9,553.66	18,633.66
Improvements, Recreational.....		2,000.00		2,000.00
Improvements, General.....		237,785.28	300,349.15	538,134.43
Improvements, Unclassified.....			61.91	61.91
	Total Improvements.....	239,785.28	300,411.06	540,196.34

SCHEDULE 22—EDUCATIONAL PLANT ASSETS—Concluded
EDUCATIONAL PLANT ASSETS FOR YEAR ENDED AUGUST 31, 1920—Concluded.

SAN FRANCISCO		August 31, 1914	Increase or Decrease	August 31, 1920
Equipment, Educational.....		1,440,488.60	90,791.06	1,531,279.66
Equipment, General.....		180,448.51	36,865.20	217,313.71
Equipment, Unclassified.....		1,227.46		1,227.46
Total Equipment.....		1,622,164.57	127,656.26	1,749,820.83
Unsegregated, Educational.....		315,697.89		315,697.89
Unsegregated, General.....		768,325.69	349,080.79	1,117,406.48
Total Unsegregated.....		1,084,023.58	349,080.79	1,433,104.37
Total Assets before Deducting Transfer (Schedule 11).....		8,901,192.70	1,605,224.86	10,506,417.56
Less:				
Educational Plant Assets Transferred to Investment Section (Schedule 11).....				2,247,273.02
Total Educational Plant Assets (Schedule 11).....				8,259,144.54
*Transfers Authorized in Resolution.....				
*Wm. M. Fitzhugh, Radium Endowment.....		1,326,388.40		
*Adjustment of Silverware—Lane Hospital.....		12,000.00		
Surplus Income Expended Schedule 13-18.....		872.15		
Endowment Funds Borrowed Schedule 9.....		95,077.40		
Endowment Expended—Lane Library Lot.....		100,765.59		
Educational Plant Assets Transferred to Investment Section.....		9,553.66a		
		60,367.66		
		1,605,224.86		
(a) Jacobs Lot was Purchased by Lane Funds, January 30, 1917, and never set up in Plant Section.				

SCHEDULE 23—ENDOWMENTS

ENDOWMENTS, AUGUST 31, 1920.

DESCRIPTION	Aug. 31, 1919	Increase	Decrease	Aug. 31, 1920
Unrestricted:				
Leland and Jane Lathrop Stanford for General Maintenance (Schedule 10 and 11)	20,864,835.18	1,058,408.67	626,035.94	21,297,207.91
Restricted Endowments and Special Funds:				
Endowments:				
Jane Lathrop Stanford Endowment—Jewel Fund for Books	500,000.00			500,000.00
C. G. Lathrop, for Medical Library Books	5,000.00			5,000.00
Dr. A. Barkan, for Medical Library Books	10,000.00			10,000.00
J. Henry Meyer, for Medical Library Books	2,500.00			2,500.00
A. Borel, for Medical Library Books	2,500.00			2,500.00
Edward Coleman, for Medical Library Books	2,500.00			2,500.00
Luther J. Holton, for Medical Library Books	500.00			500.00
Henry L. Dodge, for Medical Library Books	5,000.00			5,000.00
J. Henry Meyer, in Memory of Antoine Borel	6,178.54			6,178.54
Life Membership Subscriptions for Medical Library Maintenance	5,200.00	100.00		5,300.00
Moses Hopkins, Memorial for Hospital Beds	10,000.00			10,000.00
C. G. Lathrop, Endowment for Medical School Free Beds	10,000.00			10,000.00
Lane Hospital Nurses Alumni Association, Free Bed Endowment	5,000.00			5,000.00
Brodie G. Higley, Scholarship Fund		3,000.00		3,000.00
C. Annette Buckel, Foundation Fellowship		3,000.00		3,000.00
The Henry Gibbons Junior Library on Obstetrics and Gynecology Endowment				
Lane Medical Lecture Fund	1,946.60			1,946.60
T. W. Stanford, Endowment for Psychic Investigation	20,000.00			20,000.00
R. F. West, Endowment for Lectures on Immortality and Kindred Subjects	50,000.00			50,000.00
W. J. Dickey, Scholarship Fund	10,000.00			10,000.00
Horace Davis, Student Loan Fund	10,000.00			10,000.00
John M. Stillman, Testimonial Fund	10,000.00			10,000.00
Lane Medical Library—Sundry Endowments	3,739.65	390.94		4,130.59
	82.50			82.50
Total Restricted Endowments	670,147.29	6,490.94		676,638.23

SCHEDULE 23—ENDOWMENTS—Concluded

ENDOWMENTS, AUGUST 31, 1920—Concluded.

DESCRIPTION	Aug. 31, 1919	Increase	Decrease	Aug. 31, 1920
Special Funds:				
Levi Cooper Lane Library of Medicine and Surgery Fund.....	110,298.81			110,298.81
Lane Medical Library—Accumulated Earnings.....	10,935.34	8,863.43		19,798.77
Nurses' Home Fund.....	2,334.19	299.44	200.00	2,433.63
T. W. Stanford, Museum Restoration Fund.....	1,983.21	340.97		2,324.18
Memorial Scholarship Fund.....	2,139.44	391.14	300.00	2,230.58
Total Restricted Special Funds.....	127,690.99	9,894.98	500.00	137,085.97
Total Restricted Endowments and Special Funds (Schedule 10 and 11).....	797,838.28	16,385.92	500.00	813,724.20
Total Endowments and Special Funds Invested in Assets other than Plant (Schedule 10 and 11).....	21,662,673.46	1,074,794.59	626,535.94	22,110,932.11
Endowments of Plant:				
Educational Plant, Lands, Buildings and Equipment, Leland and Jane Lathrop Stanford.....	4,136,383.22	626,035.94	1,058,408.67	3,704,010.49
Medical College Buildings and Grounds from Cooper Medical College.....	94,700.00			94,700.00
Medical Department and Lane Hospital Equipment from Cooper Medical College.....	58,962.50			58,962.50
Medical Library Lot—from Levi Cooper Lane Library of Medicine and Surgery.....	9,080.00	9,553.66		18,633.66
Books and Furniture—from Levi Cooper Lane Library of Medicine and Surgery.....	50,350.00			50,350.00
Lane Medical Library Building and Furniture—from Funds Received from Sale of Assets of the Levi Cooper Lane Library of Medicine and Surgery.....	142,959.14			142,959.14
Thomas Welton Stanford Art Gallery—from Funds Received from Thomas Welton Stanford.....	89,305.91			89,305.91
Radium—from Funds Received from Wm. M. Fitzhugh.....				
Total Endowment of Plant (Schedule 10 and 11).....	4,581,740.77	12,000.00	1,058,408.67	4,170,921.70
Total Endowments and Special Funds (Schedule 10).....	26,244,414.23	1,722,384.19	1,684,944.61	26,281,853.81

**SCHEDULE 24—DETAIL OF CAPITAL INCREASE SINCE ENDOWMENT
DETAIL OF CAPITAL INCREASE SINCE ENDOWMENT FOR YEAR ENDING AUGUST 31, 1920.**

Balance August 31, 1919.....		3,405,920.95
INCREASES		
Profit on Foreclosure of Coryell Investment Company and Sale to Watcher & Bergman of Seattle Property.....	1,079.89	
City of Seattle, Payment of Damages to above Property.....	1,054.58	
Profit on Sale of Block "B," Versailles Tract to Geo. H. Noble.....	8,186.00	
Profit on Sale of Block "C," Versailles Tract to Geo. H. Noble.....	6,182.50	
Adjust error 1917 on Buckley Property.....	1.55	
Profits on Vina Property Sold on Contracts.....	90,436.65	
Pacific Improvement Co., final distribution of proceeds on Syndicate Land Sale.....	1,025.29	
Ione Coal and Iron Co., Liquidation Dividend.....	10,000.00	
Rocky Mountain Coal and Iron Company—Liquidation Dividend.....	10,691.71	
Increases for the year.....	128,658.17	

REPORT OF THE PRESIDENT

SCHEDULE 24—DETAIL OF CAPITAL INCREASE SINCE ENDOWMENT—Concluded
DETAIL OF CAPITAL INCREASE SINCE ENDOWMENT FOR THE YEAR ENDING AUGUST 31, 1920—Concluded.

DECREASES			
Adjustment on Sale of Calistoga Property.....	144.00		
C. U. Washburn—Allowance of \$15.00 an acre on 50 acres of land sold to him, in triangular tract near Elavo.....	750.00		
Reduction in Book Value of Stocks Owned Chevy Chase Land Co.—187 shares reduced from book value of \$9,350.00 to nominal value of \$100.00.....	9,250.00		
Reduction in Book Value Stocks Owned by Rocky Mountain Coal & Iron Co.—1,842 shares reduced from book value of \$18,420.00 to nominal value of \$100.00.....	18,320.00		
Pacific Improvement Co., dividend No. 32 of May 10, 1918, this portion being from earnings.....	13,733.36		
Polk & Robinson, Engineers—For services in title suit of L. S. J. U. and Reynolds, et al.....	32.24		
J. H. McKnight, remitted short in final settlement of mortgage.....	.02		
Transfer to Income Profits Made on Securities Sold in 1919 Prior to the Last Fiscal Closing:			
United States Liberty Bonds.....	99.75		
American Foreign Securities.....	2,156.70		
Province of New Foundland.....	240.50		
Decrease for the year.....		44,726.57	
Net Increase for the year			83,931.60
Total for Year Ending August 31, 1920 (Schedule 10 and 11).....			3,489,852.55

SCHEDULE 25—INCOME FROM RESTRICTED ENDOWMENT AND SPECIAL FUNDS, CONTRIBUTIONS FOR CURRENT PURPOSES AND SCHOLARSHIPS
FOR YEAR ENDED AUGUST 31, 1920.

	Unexpended or Unappropriated 8/31/19	Income for Year Ended 8/31/20	Total	Expended for Year Included in Income	Balance Unexpended 8/31/20	Remarks
SUMMARY						
Restricted Endowments.....	9,431.90	29,998.88	39,430.78	30,111.36	9,319.42	
Restricted Special Funds.....	4,453.67	13,962.93	18,416.60	18,416.60		
Hospital Special Funds.....	741.00	4,490.34	5,231.34	1,989.84	3,241.50	
Special Contributions.....	8,485.51	27,058.03	35,543.54	20,231.50	15,312.04	
Scholarships.....	450.00	4,415.00	4,865.00	2,326.60	2,538.40	
	23,562.08	79,925.18	103,487.26	73,075.90	30,411.36	(Schedule 10)
Income from Endowments, etc., Appropriated from In- come Schedules 13 and 16.....		42,043.78				Transferred or other Disposition as indicated
Income from Gifts.....		31,444.67				
Income from Sales.....		589.36		18,435.92		
Income from Collections.....		4,468.92				(Schedule 13 and 16) Included in Income to effect expenditures in complying with provisions of funds
Adjustment of prior years.....		1,378.45		54,639.98		
		79,925.18		73,075.90		

SCHEDULE 25—INCOME FROM RESTRICTED ENDOWMENT AND SPECIAL FUNDS, CONTRIBUTIONS FOR CURRENT PURPOSES AND SCHOLARSHIPS—Continued.
FOR THE YEAR ENDED AUGUST 31, 1920—Continued.

	Unexpended or Unappropriated 8/31/19	Income for Year Ended 8/31/20	Total	Expended for Year Included in Income	Balance Unexpended 8/31/20	Remarks
Restricted Endowments:						
Jane L. Stanford Endowment—Jewel Fund.....	2,708.90	21,300.00a	24,008.90	20,000.00	4,008.90	
Dr. A. Barten Endowment for Medical Library Books.....	909.20	426.00a	1,335.20	331.54	1,003.66	
A. Borel Endowment for Medical Library Books. Edward Coleman Endowment for Medical Li- brary Books.....		106.50a	106.50	106.50		
H. L. Dodge Memorial for Medical Library Books		106.50a	106.50	106.50		
The Henry Gibbons, Jr., Library of Obstet. and Gynec. Endowment.....	13.99	213.00a { 259.41e 82.92a	213.00	213.00		
L. J. Holton Endowment for Medical Library Books.....		21.30a	356.32	60.36	295.96	
Lane Medical Lecture Fund.....	1,623.36	852.00a	21.30	21.30		
Lane Medical Library Sundry Endowment.....	7.28	3.51a	2,475.36	1,600.00	875.36	
C. G. Lathrop Endowment for Medical Library Books.....		213.00a	10.79		10.79	
C. G. Lathrop Endowment for Medical School Free Beds.....		426.00a	213.00	213.00		
Life Membership Subscriptions for Medical Li- brary Maintenance.....	226.20	225.78a	426.00	426.00		
J. H. Meyer Endowment for Med. Library Books.		106.50a	451.98	451.98*		*Trans'd to Endow.
J. H. Meyer Endowment in Memory of A. Borel.....	490.06	263.20a	106.50	106.50		
T. W. Stanford Endowment for Psychic Investi- gation.....	{ 1,262.23	156.62c 2,500.00a	753.26		753.26	
J. M. Stillman Testimonial Fund.....		174.90a	3,918.85	2,497.78	1,421.07	*Trans'd to Endow.
Forward.....	7,241.22	27,437.14	34,678.36	26,309.36	8,369.00	Bal. Expnd. from Endow.

SCHEDULE 25—INCOME FROM RESTRICTED ENDOWMENT AND SPECIAL FUNDS, CONTRIBUTIONS FOR CURRENT PURPOSES AND SCHOLARSHIPS—Continued
FOR THE YEAR ENDED AUGUST 31, 1920—Continued.

	Unexpended or Unappropriated 8/31/19	Income for Year Ended 8/31/20	Total	Expended for Year Included in Income	Balance Unexpended 8/31/20	Remarks
<i>Forward</i>	7,241.22	27,437.14	34,678.36	26,309.36	8,369.00	
R. F. West Endowment for Lectures on Immortality and Kindred Subjects.....	1,986.70	{ 7.74c 426.00a 426.00a	2,420.44 426.00	1,500.00 426.00	920.44	
Moses Hopkins Memorial for Hospital Beds.....		200.00a	200.00	200.00*		*Included in Hospital
Lane Hospital Nurses' Alumni Ass'n Free Bed Endowment.....		426.00a	629.98	600.00*	29.98	*Expended thru Fund
W. J. Dickey Scholarship Fund.....	203.98	426.00a	426.00	426.00*		*Transf'd to Loan Fund
Horace Davis Student Loan Fund.....		150.00a	150.00	150.00*		*Expended thru Fund
B. G. Higley Scholarship Fund.....		500.00b	500.00	500.00		
C. Annette Buckel Foundation.....						
	9,431.90	29,998.88	39,430.78	30,111.36	9,319.42	

Income from Endowments (a).....	29,075.11
Income from Gifts (b).....	500.00
Income from Sales (c).....	164.36
Adjustment Prior Years (e).....	259.41
	<hr/> 29,998.88

SCHEDULE 25—INCOME FROM RESTRICTED ENDOWMENT AND SPECIAL FUNDS, CONTRIBUTIONS FOR CURRENT PURPOSES AND SCHOLARSHIPS—Continued
FOR THE YEAR ENDED AUGUST 31, 1920—Continued.

	Unexpended or Unappropriated 8/31/19	Income for Year Ended 8/31/20	Total	Expended for Year Included in Income	Balance Unexpended 8/31/20	Remarks
Restricted Special Funds:						
Levi Cooper Lane Lib. of Med. and Surg. Fund.....	4,163.67	9,942.78a	14,106.45	7,806.45*		*Transf'd to Endow.
Lane Med. Lib. Fund—Accumulated Earnings		99.44a	99.44	6,300.00		*Transf'd to Endow.
Nurses' Home Fund.....		246.01e	340.97	99.44*		*Transf'd to Endow.
T. W. Stanford Museum Restoration Fund.....		94.96a		340.97*		
Memorial Scholarship Fund.....		300.00b	391.14	91.14*		*Transf'd to Endow. Bal.
Lane Library Membership Fees.....	290.00	91.14a	605.00	300.00*		*Expended thru Endow.
Lane Hospital Unclaimed Deposits (Deferred Liability).....		315.00d		605.00*		*Transf'd to Endow.
Reserve for Employee's Liability.....		133.25d	255.40	255.40*		*Transf'd to Principal of Fund
Reserve for Pension Fund.....		122.13a	2,015.43	2,015.43*		* Do
		602.77a	602.77	602.77*		* Do
	4,453.67	13,962.93	18,416.60	18,416.60		

Income from Endowments (a).....	12,968.67
Income from Gifts (b).....	300.00
Income from Collections (c).....	448.25
Adjustment Prior Periods (d).....	246.01
	<hr/> 13,962.93

SCHEDULE 25—INCOME FROM RESTRICTED ENDOWMENT AND SPECIAL FUNDS, CONTRIBUTIONS FOR CURRENT PURPOSES AND SCHOLARSHIPS—Continued
FOR THE YEAR ENDED AUGUST 31, 1920—Continued.

	Unexpended or Unappropriated 8/31/19	Income for Year Ended 8/31/20	Total	Expended for Year Included in Income	Balance Unexpended 8/31/20	Remarks
Hospital Special Funds:						
Outpatient Obstetrical Auto Fund.....		425.00c	425.00		425.00	
San Francisco Maternity and Stanford Auxiliary Clinic.....	547.38	1,475.80d	2,023.18	1,839.17	184.01	Expended thru Fund
Donation to Orthopedic Clinic.....	100.00	44.67b	144.67		144.67	
Radium Fund.....	93.62	2,544.87d	2,638.49	150.67	2,487.82	Expended thru Fund
	741.00	4,490.34	5,231.34	1,989.84	3,241.50	
<hr/>						
Income from Gifts (b).....		44.67				
Income from Sales (c).....		425.00				
Income from Collections (d).....		4,020.67				
		<hr/> 4,490.34				

SCHEDULE 25—INCOME FROM RESTRICTED ENDOWMENT AND SPECIAL FUNDS, CONTRIBUTIONS FOR CURRENT PURPOSES AND SCHOLARSHIPS—Continued.
FOR THE YEAR ENDED AUGUST 31, 1920—Continued.

	Unexpended or Unappropri- 8/31/19	Income for Year Ended 8/31/20	Total	Expended for Year Included in Income	Balance Unexpended 8/31/20	Remarks
Special Contributions:						
C. G. Lathrop Fund for Books on California.....	176.88		176.88		176.88	
T. W. Stanford Fund for Psychic Literature.....	417.42		417.42	15.48	401.94	
Mrs. H. C. Hoover Research Fund.....	200.00		200.00	11.75	188.25	
Japanese Educational Fund.....	158.86	1,800.00b	1,641.14	1,641.14		
Research Fund in Oriental Diseases.....	499.45		499.45		499.45	
Sperry Flour Research Fund.....	750.00	750.00b	1,500.00	750.00	750.00	
1916 Insulator Test Fund.....		603.03e	603.03	71.92	531.11	
The Seabury Fellowship on World Politics.....	30.00	270.00e	300.00	300.00		
L. M. Terman Fellowship.....		250.00b	250.00	250.00		
E. P. Cubberley Fellowship.....		250.00b	250.00	250.00		
W. F. Snow Fellowship.....		300.00b	300.00	300.00		
Mrs. L. H. Hoover Fellowship.....		600.00b	600.00	600.00		
United States Social Hygiene Board—Social Diseases.....	6,570.62		6,570.62	2,860.16	3,710.46	
Theodore J. Hoover Fellowship in Mining.....		600.00b	600.00	400.00	200.00	
Current Gifts.....		425.00b	425.00	425.00		
California Packing Corporation—Study in Botulism.....		12,600.00b	12,600.00	11,584.59	1,015.41	
Research Fund in Oil Industry.....		6,000.00b	6,000.00	169.47	5,830.53	
Research Fund in Wood Distillation.....		500.00b	500.00	120.00	380.00	
N. E. L. A. Insulator Test Fund.....		1,000.00b	1,000.00		518.01	
Dr. Cooper Research Fund.....		1,110.00b	1,110.00	481.99	1,110.00	
	8,485.51	27,058.03	35,543.54	20,231.50	15,312.04	
Income from Gifts						
Adjustments Prior Years	(b).....	26,185.00				
	(c).....	873.03				
		27,058.03				

SCHEDULE 25—INCOME FROM RESTRICTED ENDOWMENT AND SPECIAL FUNDS, CONTRIBUTIONS FOR CURRENT PURPOSES AND SCHOLARSHIPS—Concluded
FOR THE YEAR ENDED AUGUST 31, 1920—Concluded.

	Unexpended or Unappropriated 8/31/19	Income for Year Ended 8/31/20	Total	Expended for Year Included in Income	Balance Unexpended 8/31/20	Remarks
Scholarships:						
Wm. J. Gross Scholarship.....	150.00	350.00b	500.00	150.00	350.00	
William Irvin Weaver Scholarship.....		150.00b	150.00	150.00		
Bertha Hyde Braley Scholarship.....		375.00b	375.00	250.00	125.00	
George E. Crothers Scholarship.....		200.00b	200.00	200.00		
Roble Scholarship.....		150.00b	150.00	150.00		
Gertrude Gardner Scholarship.....		200.00b	200.00	133.30	66.70	
Mme. Jeanne Reuiller Scholarship.....		160.00b	160.00	160.00	80.00	
Dorothy Metz Scholarship.....		200.00b	200.00	133.30	66.70	
Tuition Scholarships.....		680.00b	680.00	680.00		
Ernest A. Love Scholarship.....		150.00b	150.00	100.00	50.00	
Ira S. Lillick Scholarship.....		500.00b	500.00		500.00	
Mrs. Ira S. Lillick Scholarship.....		500.00b	500.00		500.00	
C. F. Elwell Scholarship for Grad. Stud. Elec. Eng.....	300.00	800.00b	1,100.00	300.00	800.00	
	450.00	4,415.00	4,865.00	2,326.60*	2,538.40	*Expended thru Fund

Income from Gifts (b).....4,415.00

REPORT OF THE PRESIDENT

141

SCHEDULE 26—STUDENT LOANS

STUDENT LOANS FOR THE YEAR ENDED AUGUST 31, 1920.

	Investment in Fund 8/31/19	Additions to Fund During Year	Investment in Fund 8/31/20	Outstanding Loans 8/31/19	Loans Made During 1919-20	Loans Repaid During 1919-20	Unencumbered Bal. 8/31/20 Available for Loans
Associated Students Undergraduate Loan Fund.....	250.00		250.00	250.00		75.00	75.00
William Burton Barber Loan Fund.....	6,569.80	5.00a	6,574.80	810.00	4,270.00	1,130.00	2,424.80
Horace Davis Loan Fund.....	850.82	426.00b	1,276.82	450.00	300.00	100.00	626.82
Harker Alumnae Association Loan Fund.....	225.00		225.00	100.00		100.00	225.00
Stanford Alumni Association Graduate Loan Fund.....	245.00		245.00	215.00			30.00
Stanford Alumni Association Undergraduate Loan Fund.....	500.00	20.00a	520.00	300.00		100.00	320.00
Class of 1906 Loan Fund.....	100.00		100.00	100.00			
Women's Student Loan Fund.....	1,432.88	20.00a	1,452.88	1,223.20	580.00	602.91	252.59
Medical Faculty Relief Fund.....	100.00	100.00a	200.00				200.00
Schedule 10 and 15.....	10,273.50	571.00	10,844.50	3,448.20	5,150.00	2,107.91	4,154.21

A—Additions from Gifts..... 145.00

B—Additions from Income of Endowment..... 426.00

571.00

APPENDIX I.

GIFTS TO THE UNIVERSITY

GENERAL

- From Brodie G. Higley, of Hudson Falls, N. Y., \$3000 to establish the B. G. Higley ('99) scholarship.
- From C. F. Elwell, of Paris, France, \$300 for the maintenance of the C. F. Elwell Scholarship in Electrical Engineering for the academic year 1919-20.
- From Judge George E. Crothers, of San Francisco, \$200 to maintain the Crothers Law Scholarship for the academic year 1919-20.
- From Mrs. J. M. Braly, of Fresno, Cal., \$250 to maintain for the academic year 1919-20 the Bertha Hyde Braly Scholarship, open to women students of Fresno and Santa Clara Counties.
- From Mrs. J. E. McDowell, of Stanford University, \$150 to maintain the Roble Club Scholarship for the academic year 1919-20.
- From Mrs. Wilmer J. Gross, of San Jose, Cal., \$150 to maintain the Wilmer J. Gross Scholarship for the academic year 1919-20.
- From Miss Ray Weaver, of Turlock, Cal., \$150 to maintain the William Irvin Weaver Scholarship for the academic year 1919-20.
- From Miss Gertrude M. Gardiner, of Stanford University, \$200 to establish the Gertrude M. Gardiner Scholarship for the academic year 1919-20.
- From Mrs. Lillian C. Metz, of Sherman, Texas, \$200 to establish for the academic year 1919-20 the Dorothy Metz Scholarship in memory of her daughter, who died in service.
- From Mr. and Mrs. Allan Love, of Prescott, Arizona, \$150 to establish a scholarship in memory of their son, Ernest A. Love ('18), who died in service in France.
- From Mme. Jeanne R. Rouiller, of Palo Alto, \$160 to establish a scholarship in memory of her daughter, Marcelle Henriette Rouiller Calley ('16).
- From Mr. and Mrs. Ira S. Lillick, of San Francisco, \$1000 to establish two scholarships of \$500 each, open to worthy students, preferably in Law.
- Tuition Scholarships:
- From Mrs. Gertrude Carson, of Stanford University, \$80.
 - From Roble Club, \$80.
 - From Bernard Jones, of Stanford University, \$240.

- From Manly Axtell Moule, of Palo Alto, \$160.
From Phi Kappa Sigma Fraternity, \$80.
From Professor and Mrs. P. J. Treat, of Stanford University, \$80.
From Andrew J. Field ('12), of San Francisco, \$100, placed at the disposal of the President of the University.
From the Alumni Association, \$300 toward the publication of the Alumni Directory.
From Sidney C. Ewing, of Stanford University, \$5.00 to the William Burton Barber Loan Fund, in appreciation of help received.
From Robert F. Stever ('13), \$100 to be used by the office of the Appointment Secretary.
From the Commission for Relief in Belgium, four Fellowships of the value of 10,000 francs, for study in Belgian Universities.
From Herbert Hoover ('95), collection of war material valued at \$50,000.
From an anonymous donor, \$100,000 for the erection of an addition to the Stanford Union.
From an alumnus, \$1050 to the Stanford Union, for general improvements.

BOTANY

Gifts to the Dudley Herbarium were as follows:

- From Mrs. F. C. Abrams, 30 specimens of New Mexican plants.
From Professor L. R. Abrams, 304 specimens of California plants.
From Miss Georgia Bentley, 35 specimens of California plants.
From Mr. Harry Borthwick, 8 specimens of local plants.
From Mr. Luther Burbank, 3 specimens of cultivated plants.
From Mrs. Joseph Clemens, 6 specimens of California plants.
From Miss Helen Lois Dale, 2 specimens of local plants.
From Miss Hester Davis, 5 specimens of local plants.
From Dr. Anstruther Davidson, 1 specimen.
From Mr. Donald Doane, 45 specimens of plants from British Columbia.
From Mr. C. D. Duncan, 12 specimens of plants from Fresno, Cal., and 100 specimens of plants from the Santa Lucia Mts., Cal.
From Miss Rena Duthie, 57 specimens of plants from Pullman, Wash.
From Miss Helen Edwards, 1 specimen of Delphinium from Monterey County.
From Mrs. Roxana S. Ferris, 327 specimens of plants from the Santa Lucia and Santa Cruz Mts.
From Mr. G. F. Ferris, 15 specimens of plants from the Cape Region of Lower California.
From Rev. A. K. Glover, 2 specimens of plants from San Diego, Cal.
From Mr. M. W. Gorman, 173 specimens of plants from western Oregon and Washington.
From Miss Ynez Henderson, 2 specimens of local plants.
From Dr. A. C. Herre, 200 specimens of plants including 59 specimens of miscellaneous lichens, 62 specimens of flowering plants from San

- Diego, Cal., 4 specimens from Springfield, Ill., and 95 specimens from New Jersey.
- From Mr. Paul Hichborn, 12 specimens of local plants.
- From Mr. A. S. Kalenborn, 166 specimens of plants from Peru.
- From Mr. George Kimber, 1 specimen of cultivated plant.
- From Mr. L. R. Langworthy, 5 specimens of *Lupinus formosus*.
- From Miss M. I. McCracken, specimen of plant from Felton, Cal.
- From Mr. G. H. Mallory, 19 specimens of plants from Bradley, Cal., 15 specimens from Ogilby, Cal., 39 specimens from Globe, Ariz., 32 specimens of cultivated and local plants.
- From Mr. H. L. Mason, 43 specimens of cultivated and local plants.
- From Mr. J. C. Nelson, 119 specimens of plants from Oregon.
- From Miss Doris Overman, 13 specimens of plants from Yreka, Cal.
- From Mr. S. B. Parish, 72 specimens of plants from southern California.
- From Miss Serena Philips, 24 specimens of plants from Wyoming.
- From Mr. E. H. Quayle, 8 specimens of California plants.
- From Mr. T. Rich, 1 specimen of plant from Lancaster, Cal.
- From Mr. W. H. Rich, 1 specimen of plant from Newport, Ore.
- From Miss Lucile Roush, 255 specimens of plants from San Juan County, Wash.
- From Mr. W. H. Shockley, 50 specimens of plants from California Redwood Park, and 3 specimens of local plants.
- From Miss Iola Williams, 1 specimen from Mt. Diablo, Cal.

CHEMISTRY

- From the Sperry Flour Company, \$750 to continue their fellowship in the Department of Chemistry for the academic year 1920-21, for the study of wheat and wheat flour.
- From Dr. William Freeman Snow ('96), \$360 as a contribution to meet any needs to which the Department may choose to devote it.

EDUCATION

- From Miss Charlotte S. Playter, of Piedmont, Cal., \$500 to continue the Buckel Fellowship during the academic year 1919-20.
- From Mr. C. F. Humphrey, of San Francisco, \$25 for the experimental work of Dr. Terman.
- From Professor E. P. Cubberley, of Stanford University, \$250, the first instalment in the maintenance of the research fellowship in problems relating to school administration.
- From Professor L. M. Terman, of Stanford University, \$250, the first instalment in the maintenance of the research fellowship in the study of psychological and educational problems relating to gifted children.

ELECTRICAL ENGINEERING

From the National Electric Light Association, \$1000 to meet the cost of cyclic temperature durability tests of transmission line insulators.

From the Kelman Electric Manufacturing Company, of Los Angeles, five barrels of Mineral Seal oil and container.

From the California-Oregon Power Company, through the Chief Engineer, Mr. Perry O. Crawford ('08), exhibit collection of Faradoid pin-type high voltage line insulators.

ENTOMOLOGY AND BIONOMICS

From Mr. A. H. Hollinger, of Detroit, Mich., a valuable collection of nearly a thousand lots of Coccidæ from Texas. This adds many new and interesting species to the Department's collection.

From Mr. E. O. Bremner ('05), a loan exhibit of his extensive collection of Coccidæ, including specimens from all parts of the world. This generous loan will greatly aid in the study of this group.

From Mr. A. F. Swain ('14), a loan exhibit of his large collection of Aphids (plant lice) from California.

HISTORY

From Japanese donors, through the office of the Japanese Consul, San Francisco, \$1800 for the salary of an instructor in Japanese History and Government for the academic year 1919-20.

HOPKINS MARINE STATION

From Dr. Frank R. Lillie, of Hull Zoological Laboratory, University of Chicago, \$200.

LIBRARY

From Dr. Casey A. Wood, of Chicago, medical encyclopedias and books.

From Mr. J. C. Cebrian, of San Francisco, two boxes of Spanish books.

MEDICAL SCHOOL

From Mr. Wellington Gregg, of San Francisco, and a group of friends, \$1110 for the salary of a technician to aid Dr. Thomas Addis.

From the National Canners' Association, \$12,600 for the study of botulism under the direction of Dr. E. C. Dickson.

From a grateful patient, \$200 for clinic beds in the Neurological service.
From Dr. Edgar Dale Downing, of Woodman, Colo., \$100 for the loan fund for disabled physicians.

MINING AND METALLURGY

From Mrs. Lou Henry Hoover ('98), of Stanford University, \$600 to establish a fellowship in mining.
From Professor Theodore J. Hoover ('01), of Stanford University, \$600 to establish a fellowship in mining.
From the Standard Oil Company, General Petroleum Corporation, and Associated Oil Company, \$2000 each, for research in the oil industry.
From various firms, \$1500 for five years, for research in wood distillation.

ZOOLOGY

From James N. Proctor ('07), collection of 500 bird skins.

APPENDIX II.

DEPARTMENTAL REPORTS

ANATOMY

During the academic year 1919-20 the faculty in Anatomy was composed of Professors Arthur William Meyer, Frank Mace McFarland; Associate Professor Clara S. Stoltenberg, Acting Associate Professor Charles Clifford Macklin; Assistant Professor Edgar Davidson Congdon, and Assistant Donald Bertrand Tresidder. Professor Stoltenberg was absent on leave during the winter and spring quarters studying in the neurological laboratory and clinic of the Department of Medicine, Columbia University. Both the teaching and investigational activities of the members of the department were materially furthered by the technical assistance of Miss Emily Bartlett and by the presence of Mr. Frank Barrett who acted in various capacities.

The following articles and investigations by the faculty and students were published or completed during the year:

Congdon, E. D.: The distribution and the origin of septa and walls of the sphenoid sinus. *Anat. Rec.*, Vol. 18, March, 1920.

— Simultaneous occurrence of very small sphenoid and frontal sinuses. *Anat. Rec.*, Vol. 19, August, 1920.

— Anomalous fibrous cords in the hand and the phylogeny of the flexor digitorum sublimis tendon. *Anat. Rec.*, Vol. 19, August, 1920.

— Acquired skeletal deformities in a young fowl. *Anat. Rec.*, Vol. 19, August, 1920.

Draper, R. L.: The prenatal growth of the guinea pig. *Anat. Rec.*, Vol. 18, May, 1920.

Goldstein, Joseph S.: Some points in the anatomy of the human temporal bone.

Heron, I. C.: Measurements and observations on the human auditory ossicles.

Hield, Clarence: Early developmental stages of the human omental bursa.
Meyer, A. W. An unexcelled medium for the preservation of cadavers. *Science*, Vol. 50, December, 1919.

— Hydatiform degeneration in tubal and uterine pregnancy. *Contributions to Embryology*. No. 40. Publication 272, Carnegie Institute of Washington, 1920.

- The case and problem method in anatomic neurology. *Anat. Rec.*, Vol. 18, May, 1920.
- The Practitioner's Contribution to Embryology. *Cal. St. Journ. Med.*, Vol. 18, February, 1920.
- Supplement in Osteology. Stanford University Press, November, 1919. (Printed, not published.)

Seitz, Donald: The relation of epiphyseal height to bone length, with observations on the main nutrient canal of the tibia.

Tresidder, D. B.: The correlation between implantations and corpora lutea in the guinea pig, with observations on the cytology of the corpora lutea.

Tufts, John M.: The structure of the Purkinje fibres.

Investigations were begun also by Mr. Warnock on the seminal vesicles of the guinea pig and by Mr. Wood on the regeneration and absorption of cartilage.

The courses given and the attendance in each, were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance			
			Autumn	Winter	Spring	Summer
Congdon.....	3-4-5. Dissection.....	3-8	33			
Congdon.....	11. Morphogenesis.....	2		3		
Macklin.....	3-4-5. Dissection.....	3-11				25
McFarland.....	1. Histology.....	3-8	26	24	21	
McFarland.....	8. Special	2-3	3	1	5	
Meyer.....	13. Investigation.....	2-5	4	5	2	3
	Special work.....		2		2	
Meyer.....	9. Topographic anatomy.....	2-5	5	6		
Meyer, Congdon.....	3-4-5. Dissection.....	3-8		31	38	
Stoltenberg.....	6. Neurology.....	5	16			
Stoltenberg.....	10. Sense organs.....	2-4	12			
Totals.....			101	70	68	28

The equipment of the department was extended by additions to the student loan collections in Histology and Neurology and by making available for student inspection a collection of osteological and moist specimens which had been accumulated from dissecting-room material during the last decade. This collection is not to serve for display but for purposes of illustration and instruction. The human embryological collection also has been enlarged by generous donations from physicians, but is growing very slowly in spite of repeated personal efforts.

ARTHUR WILLIAM MEYER,
Professor of Anatomy.

APPLIED MATHEMATICS

The faculty of the department was as follows: Professors Leander Miller Hoskins, Halcott Cadwalader Moreno and Sidney Dean Townley, and Associate Professor William Albert Manning.

Classes were conducted also by the following teaching assistants: Heinrich Wilhelm Brinkmann, Gordon Cumming Hess, and John Wesley Templeton.

The courses given and the enrolment in each were as follows:

INSTRUCTOR	COURSE	Attendance			
		Units	Autumn Quarter	Winter Quarter	Spring Quarter
Manning, Moreno, Hoskins, Hess, Brinkmann, Templeton..	1a. Elementary analysis.....	5-5	232	72	
Manning, Moreno, Brinkmann, Hess.....	1b. Elementary analysis.....	5-5		179	63
Manning, Moreno, Townley, Brinkmann.....	2a. Calculus.....	5-5	77		139
Manning, Moreno, Townley, Hoskins.....	2b. Calculus.....	5-5	80	63	
Hoskins.....	3a. Theoretical mechanics.....	5		108	
Hoskins.....	3b. Theoretical mechanics.....	5			108
Moreno.....	8. Engineering mathematics.....	5	5		
Townley.....	10. Descriptive astronomy.....	4	31		
Townley.....	11. Practical astronomy.....	3		8	
Totals.....			425	430	310

LEANDER MILLER HOSKINS,
Professor of Applied Mathematics.

BACTERIOLOGY AND EXPERIMENTAL PATHOLOGY

The department faculty for 1919-20 consisted of: Wilfred Hamilton Manwaring, professor; Charles Victor Burke, Edwin William Schultz, instructors; Georgina Spooner Burke, lecturer; Harold Jay Beaver, Tholow Binkley, teaching assistants; Ehler Henry Eiskamp, Alberta Marx, research assistants.

The following courses were given:

INSTRUCTOR	COURSE	Units	Attendance			
			Autumn Quarter	Winter Quarter	Spring Quarter	Summer Quarter
Schultz.....	A. Hygiene of the infectious diseases.....	1			65	
Manwaring.....	B. Anatomy and physiology of disease.....	1			37	
G. S. Burke.....	C. Household bacteriology.....	6				6
Schultz, C. V. Burke..	1. General bacteriology.....	4-5		8	17	11
Manwaring.....	1a. Bacteriological chemistry.....	1			16	
C. V. Burke.....	2. Pathogenic bacteriology.....	6-9	23		10	
Manwaring.....	2a. Principles of immunity.....	1			12	
C. V. Burke.....	3a. Elementary serology.....	4	7			
Manwaring, Schultz...	4. General pathology (a).....	6-10		25		6
Manwaring.....	4a. Pathological physiology.....	2		21		
Schultz.....	4b. Histopathologic technic.....	2		3	1	
Division of Medicine..	5. Clinical laboratory methods	13	2	2	2	2
C. V. Burke.....	6. Journal club.....	2	9			
Manwaring, Schultz...	7. Advanced work, research.....	5-13	1	3	8	4
Totals.....			42	62	168	29

WILFRED HAMILTON MANWARING,
Professor of Bacteriology and Experimental Pathology.

BOTANY

The teaching staff for 1919-20 included the following: Professors Douglas Houghton Campbell and George James Peirce; Associate Professors Leroy Abrams and Leonas Lancelot Burlingame; and Assistant Professor James Ira Wilson McMurphy. Mr. Harold C. Hampton acted as Assistant in Botany.

Professor Campbell has continued his investigations in East Indian liverworts, the latest results being given in a recently published paper. A paper is now in press dealing further with the distribution of the Flora of the Hawaiian Islands.

The most important work of the year has been a study of the development of a remarkable fern, *Botrychium obliquum*, the material being furnished through the kindness of Dr. H. L. Lyon of Honolulu. This

investigation has brought out some very important facts bearing upon the relationships of the more primitive ferns.

A preliminary report has been published in the proceedings of the National Academy of Sciences, and the complete results are now ready for publication.

Mr. L. G. M. Baas Becking, fellow in Botany, is at present engaged in a further study of this fern.

Professor Peirce continued his part in the nation-wide experimental investigation, conducted under the National Research Council, into the nutrient salt requirements of wheat; has worked, with his students, upon certain enzymes occurring in hemp, hemp-seeds, etc.; upon sunlight in connection with photosynthesis and reproduction; and upon starch. With Mr. Harold C. Hampton, Assistant in Botany, he is experimenting with an autographic sunshine recorder. He expects to finish his Plant Physiology during the next year. As Collaborator of the U. S. Department of Agriculture, he has examined with Professor McMurphy the kelp beds at Summerland, California, from which the Government is now obtaining potash and other valuable products. The probable causes of the decay of the kelp have been made out. L. G. M. Baas Becking and Harold C. Hampton have collaborated in a paper on the Measurement of the catalytic power of Catalase (*American Journal of Botany*, July, 1920) and one on the Kinetics of the action of Catalase Extract from marine algæ (*Journal of General Physiology*, July, 1920).

The Dudley Herbarium has been the recipient of gifts from thirty-eight former students and friends. These gifts total 2290 specimens. The mounted collections have been increased by 6189 sheets and now total 103,833 exclusive of the cryptogamic collections.

Associate Professor Abrams has continued his work on the preparation of an Illustrated Flora of the Pacific States, the first volume of which is now completed.

Associate Professor Burlingame has continued his genetic investigations of *Lupinus* and *Clarkia* and initiated new work with *Crepis* and *Mimulus*. In *Lupinus* a paper has been prepared reporting four years of field studies of progressive mutations and their inheritance in garden culture. An extensive series of seed germination experiments is also reported. The inheritance of one of the factors concerned in the spotting of flower color in *Clarkia* has been analyzed and the results prepared for publication. Two or more additional factors are also concerned in flower color and are still under investigation. Materials have been grown and collected for cytological studies of *Clarkia* and *Crepis*. Materials of *Mimulus* are being collected this summer for the investigation of the inheritance of flower color and plant size. He has also collaborated with Professors Martin, Heath, and Peirce in the organization of a new type of course in General Biology to be offered cooperatively by the Departments of Botany, Physiology, and Zoology. He has given considerable time to the preparation of abstracts for the new journal, *Botanical Abstracts*.

Assistant Professor McMurphy has continued his studies of the local fungi, particularly those producing disease in plants. He has made many additions to the number of plants growing in the Experimental Garden and has added a few specimens to the collections of fungi. At Pacific Grove he has studied the marine algæ and has succeeded in making preparations of some of the more common forms in their natural colors. These are preserved in museum jars at the Hopkins Marine Station. As Collaborator of the United States Department of Agriculture he has studied, in conjunction with Professor Peirce, the decay which takes place in the kelp beds off Summerland, California, one of the sources of potash for fertilizer, etc.; has isolated in pure cultures some of the bacteria concerned, and compared them with bacteria from the kelp at Pacific Grove. With advanced students he has carried on the following studies:

With A. P. Batchelder a study of the more important timber-destroying fungi of this coast;

With Miss Ruth Hevener a study of the diseases of tomato found in the Santa Clara Valley. Several of the pathogenic organisms have been isolated and are being carried in pure cultures for further experiment with different varieties of tomato growing in the Experimental Garden with a view to finding disease-resistant forms.

With C. E. Scott a study of the Crown Wart of Alfalfa, particularly the germination of the resting-spores and zoospores, a preliminary report of which will appear in Science.

The courses given and the attendance were as follows:

INSTRUCTOR	COURSE	Units	Attendance			
			Autumn	Winter	Spring	Summer
Campbell, Burlingame, Hampton.....	1a. Elementary botany.....	5	27			
Abrams, Hampton.....	1b. Elementary botany.....	5		25		
Peirce, Hampton.....	1c. Elementary botany.....	5			22	4
Campbell.....	2. Fresh-water algae.....	5		9		
Campbell.....	3. Marine algae.....	4				3
McMurphy.....	4. General fungi.....	5		7		
McMurphy.....	6. Plant pathology.....	5			6	
Burlingame.....	9. Seed plants.....	5		4		
Abrams.....	10. Systematic botany.....	5			13	
Abrams.....	11. Geographical distribution.....	5	6			
Peirce.....	12. Nutrition, respiration.....	5	10			
Peirce.....	13. Growth, irritability, reproduction.....	5		4		
Burlingame.....	15. Plant breeding.....	5			4	
Peirce.....	15a. Plant physiology.....	5				1
Burlingame.....	16. Technique.....	5			1	
McMurphy.....	17. Advanced pathology.....	2-3-5		3		
Campbell.....	18. Advanced archegonates.....	4	1			
Abrams.....	19. Advanced systematic botany.....	5		1	2	
Burlingame.....	20. Problems in genetics.....	3	3	3	1	
Peirce.....	21. Advanced physiology.....	5	1		2	
Campbell.....	22. Research in morphology.....					
McMurphy.....	23. Research in plant pathology.....	3			2	
Abrams.....	24. Research in taxonomy.....					
Burlingame.....	25. Research in cytology and genetics.....	15	1			
Peirce.....	26. Research in physiology.....	5-10	3	3	3	4
McMurphy.....	Algae (at Hopkins Marine Station).....	5				7
McMurphy.....	Botanical survey (at Hopkins Marine Station).....	5				1
Totals.....			52	59	56	20

DOUGLAS HOUGHTON CAMPBELL,
Professor of Botany.

CHEMISTRY

The instructing staff consisted of Professors Robert Eckles Swain, Lionel Remond Lenox, Edward Curtis Franklin, and Stewart Woodford Young; Associate Professor John Pearce Mitchell; Assistant Professor William Henry Sloan; Instructors Alice Ruth Berger, William Edmund Burke, Ernest Oertly, and Norris Watson Rakestraw; and Imo Pearl Baughman, Herbert Arthur Endres, Charles Kirkton McWilliams, William M. Schaufelberger, and Sidney Schein, Teaching Fellows.

In addition, the following appointments were made for the summer quarter: John Frederick Gross Hicks, Professor of Chemistry in the Oregon State Agricultural College, as Instructor in General Inorganic

Chemistry, and Charles Kirkton McWilliams, as Instructor in Organic Chemistry.

The courses of instruction offered in lecture and laboratory work, and the enrolment in each course, are given in the following tabular statement:

LECTURES

INSTRUCTOR	COURSE	Units per Week	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Mitchell.....	1. General inorganic.....	3	142	146		
Rakestraw.....	2. General inorganic.....	1	26	28		
Mitchell.....	3. General inorganic.....	3		121	137	
Hicks.....	4. General inorganic.....	6				38
Swain.....	5. Principles.....	4	64			
Swain.....	6. Principles.....	4			54	
Franklin.....	7. Organic.....	5	56			
Franklin.....	8. Organic.....	5		45		
Franklin.....	9. Adv. organic.....	3			38	
McWilliams.....	10. Elem. organic.....	5			39	6
Young.....	13. Gen'l physical.....	5	39			
Young.....	14. Gen'l physical.....	5		39		
Burke.....	15. Electrochemistry.....	3			10	
Swain.....	16. Physiological.....	5	44			24
Franklin, Swain.....	17. Seminary.....	1	17	26	28	9
Lenox.....	20. Qualitative anal.....	1			49	
Sloan, Schein.....	21. Quantitative anal.....	1		22	15	7
Sloan.....	22. Quantitative anal.....	1		9		11
Totals.....			388	436	370	95

LABORATORY

INSTRUCTOR	COURSE	Units per Week	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Mitchell, Rakestraw..	a. Elementary inorganic.....	3	30	34		
Mitchell, Rakestraw..	b. General inorganic.....	3	82	111	40	
Rakestraw.....	c. General inorganic.....	3-5				31
Lenox, Berger.....	d. Qualitative analysis.....	5	45	52	48	
Franklin, McWilliams	e. Organic prep'ns.....	5	1	25	22	6
Sloan, Schein.....	f. Quantitative analysis.....	5	66	22	14	7
Sloan, Schein.....	g. Quantitative analysis.....	4		9		11
Sloan, Schein.....	h. Quantitative analysis.....	5	13	7		3
Lenox, Berger.....	i. Advanced quantitative.....	5			10	
Young, Burke.....	k. Phys. chem. meas.....	5	9	5	1	
Swain.....	1. Physiological.....	4-5	35			22
Franklin.....	x. Research or special lab.....	2-10	3	10	10	2
Young.....	x. Research or special lab.....	2-8	4	3	6	3
Swain.....	x. Research or special lab.....	2-10	8	1	11	4
Mitchell.....	x. Research or special lab.....	4			2	
Burke.....	x. Research or special lab.....	3		1		
McWilliams.....	x. Special laboratory.....	3-6				2
Totals.....			296	280	164	91

The total registration of major students in chemistry for the autumn, winter, and spring quarters was 276, of whom 35 were in graduate standing. The major registration for the summer quarter was 52, of whom 19 were graduate students.

The John Maxson Stillman Scholarship in Chemistry was held by Mr. Alan C. Richardson; and the William Irvin Weaver Scholarship in Chemistry by Mr. Francis William Bergstrom, who resigned at the end of the autumn quarter, and by Mr. Neil Preston Moore for the ensuing winter and spring quarters.

During the present academic year Professor Lenox, in collaboration with Instructor Berger, has developed a rapid method for the determination of silicic acid in silicates and has made a study of the separation of titanic acid, with special reference to the titaniferous iron ores.

Professor Franklin has work of research in progress on the metallic derivatives of the alcohols; on the ammono carbonic acids and their salts; with Mr. F. W. Bergstrom on ammono salts of tungsten, molybdenum, iron and manganese; with Mr. Milan W. Garrett on ammono salts of uranium; with Mr. H. B. Reilly on the preparation of carbon tetrafluoride and a study of its properties as a possible electrolyte; with Miss Marguerite Eiskamp on the preparation of potassium methyl amine and certain metallic salts of ammono acids; and with Mr. Achille Albouze on an investigation of lubricating oils. He has published papers on metallic salts of pyrrol, indol, and carbozol; and on metallic salts of benzene sulfonitramide, paratoluene sulfonitramide, and nitrotoluene sulfonitramide.

Professor Franklin has served as a member of a number of important scientific committees, among them the Advisory Committee of the Bureau of Mines; the Ramsay and the Priestly Memorial Committees; the Metric Weights Committee of the American Chemical Society; the Executive Committee of the Pacific Division of the American Association for the Advancement of Science; as Councillor-at-Large of the American Chemical Society; and as delegate of the latter Society to the World Trade Convention at San Francisco. In the course of the summer he delivered a series of lectures at the Carmel branch of the Desert Laboratory of the Carnegie Institution.

Professor Young has conducted work of research along various lines during the year, notably with Miss I. P. Baughman on the mutual flocculation of colloids; with Mr. Neil P. Moore on the principles of fractional distillation; with Mr. R. M. Heinz on reactions in fused salts and on very sensitive thermostat regulation; with Mr. P. H. Jones on the cracking of petroleum; and with Mr. P. S. Williams on the passive state of tin.

Professor Swain, in collaboration with Instructor Rakestraw, has in progress an investigation of the effects of severe fatigue on the composition of the blood; and has carried on work of research with Mr. R. J. Cross, under the fellowship grant of the Sperry Flour Company, on the proteins of wheat from various sections of the country, in an effort to account for the poor leavening properties of flour made from most Western wheat; with Mr. W. M. Schaufelberger on the amino acids in whale blood fibrin;

and has completed for publication with Dr. R. G. Myers a study of the composition of the blood of certain marine mollusks, and of the whale.

Professor Swain has served as Chairman of the California Section of the American Chemical Society; as acting councillor at the St. Louis meeting of the Society; and as a member of the Advisory Committee of the World Metric Standardization Council; and at the invitation of the Court and interested parties is acting as Commissioner of the United States Federal Court at Salt Lake City in the settlement of lengthy litigation involving the land owners of the rich agricultural district near Salt Lake City and the two smelters operating in that section. The investigation is being carried on through an assisting resident scientific staff.

At the request of Dr. H. G. Mehrtens of the Stanford University Medical School, this Department undertook last year to do the chemical work in connection with the extended investigation which he is conducting on the therapeutic value of certain arsenical compounds. This work has been in progress throughout the year by Mr. Philip S. Williams, a graduate student in the Department, under the direction of Professor Swain.

It is with great regret that I record the death of Dr. Ernest Oertly on January 5, 1920, after a month's illness. Dr. Oertly was born in Switzerland and received his doctorate in 1912 under Professor Pictet, the distinguished Professor of Chemistry at the University of Geneva. During his two years of residence here, as Instructor in Organic Chemistry, he fulfilled in every way the high expectations we had of him. He was a very successful teacher and an enthusiastic and untiring worker along lines of scientific research.

The Sperry Flour Fellowship, carrying an honorarium of \$750, founded last year to encourage the study of the chemistry of cereal products, has been renewed for the next academic year. Grateful acknowledgment should also be made of the endowment by Miss Ray Weaver of the William Irvin Weaver Scholarship, to be awarded annually to a worthy student in Chemistry in memory of her brother, William Irvin Weaver (A. B. in Chemistry, 1913; A. M., 1914), who lost his life in service in France in the great war; and of a contribution of \$360.00 to the funds of this Department by Dr. William Freeman Snow (A. B. in Chemistry, 1896), to meet any needs to which the Department may choose to devote it.

Upon the unanimous recommendation of the Department Faculty the degree of Chemical Engineer will be awarded only after the completion of six years of University work along approved lines, two years of this time to be devoted to graduate work. The new regulation will not apply to students who began their work in Chemical Engineering previous to this year. It has become practically impossible in five years to provide the thorough and extended training in chemistry, engineering, physics and mathematics which this professional degree should imply without assigning the student from the outset to a rigid and crowded curriculum, and depriving him of many of the important elements of a general education.

ROBERT ECKLES SWAIN,
Professor of Chemistry.

CIVIL ENGINEERING

The teaching force of the department was as follows: Professors Charles David Marx, Charles Benjamin Wing, and John Charles Lounsbury Fish; Assistant Professors Charles Moser, Clarence Earl Blee and Lawrence Edminster Cutter.

During the past year the work of the department of Civil Engineering became normal. Professor Wing, after successful service in France, whence he returned as Lieutenant Colonel of the Twenty-third Engineers, has again taken up his work as an inspiring teacher, and the department congratulates itself on his safe return. We were fortunate to add to our teaching staff Mr. C. E. Blee as assistant professor to take the place of Mr. J. H. Foss. Mr. Blee came to us from one of our large California Hydraulic Power Corporations and the department was very glad to secure his services, though we realized at the time that we might not be able to hold him for long in a teaching position. Much to our regret, his former employers offered him such tempting inducements that he tendered his resignation at the end of the academic year.

The recent action of the faculty of the University in establishing a Lower Division in which all students entering the University are to register for the first two years of their undergraduate work, and during which time they are to take certain required courses other than those normally prescribed by the department of Civil Engineering, is one which does not meet the approval of the department faculty for the reasons set forth in my letter of May 26th accompanying the proposed schedule for students preparing for the course in Civil Engineering. I can but repeat what was there stated:

The University requirements recently adopted by the Council will have the effect of compelling practically all of the students who contemplate taking the undergraduate course in civil engineering to spend at least five years at the University, unless an arrangement can be made suspending for some time the putting in force of the new requirements, so that the students now in the high schools who are contemplating taking a Civil Engineering course can be duly notified of the requirements which they must meet in order to graduate in four years.

However much the department might prefer to have its students spend five, or even six years at the University, we must bear in mind that this involves a serious economic question. Even in the past when there was no tuition fee, only a comparatively small number of students in engineering found it possible to remain for a fifth year; and now, since tuition is charged, remaining for a fifth year will be an additional burden. The department therefore—and this view is shared by most engineering educators—doubts the wisdom of compelling its students to remain more than four years before receiving their undergraduate degrees.

I can but voice renewed regrets at the action taken by the University Council, which action I believe detrimental to the best interests of this department. I do not believe in the compulsory injection of so-called culture. The most successful method for giving men culture is to put them under the influence of first class professors who know their subjects and can inspire the students. It seems to me that because certain depart-

ments in the University have failed in their duty to the students registering under them, have failed to give each student's case the attention which it deserved, the solution has been adopted of throwing all the students into a common melting pot for the first two years of their course.

The desirability of broadening the courses in engineering is admitted. We have constantly urged upon our students the importance of taking courses in English, Economics and History. As a rule, upper classmen respond more willingly to these suggestions; first and second year students arrive with a distaste for a continuance of the study of English and other languages, and I do not expect very satisfactory results from the compulsory taking of these courses.

In discussing the question whether the engineering course should be extended to five or six years, in a pamphlet on engineering education, brought out by the Tau Beta Pi, an engineering honor association, it is admitted that any such lengthening should be primarily for the purpose of furnishing opportunity for the student for polishing up the human side of himself, but the writer goes on to say:

The cultivation of this side of the student may not be forced by requiring him to take courses for which he has no interest and no ability (as perhaps, for instance, foreign languages) but rather by enabling him to make his own selection of non-professional and non-fundamental courses of study under the guidance and inspiration of broadminded faculty members. It should be noted, also, that studies which furnish this particular and desirable kind of culture are not necessarily nor always non-scientific, but may be geology, psychology, mineralogy, anthropology—in fact, any study which leads to a fuller recognition of the relating of ourselves to our fellow-men and to our Creator.

Even, therefore, if the practical lengthening of the Civil Engineering course to a five year course is insisted upon, and strict compliance with the present faculty regulations will have that effect, in the opinion of those best qualified to judge, the compulsory features of those regulations should be stricken out, and it should simply be stated that from now on a student who contemplates taking a Civil Engineering course at Stanford University, will have to spend five years at the University, unless he brings for entrance credits the subjects listed below.* Every student, therefore, will have time, either during his four or five year course, to take the number of required hours of broadening subjects without finding himself restricted to a prescribed course.

-
- * a. Three high school units in one foreign language, or two high school units in each of two foreign languages.
 - b. One high school unit in biological science.
One high school unit in either physics or chemistry.
 - c. One high school unit in history.
 - d. Three high school units in mathematics.

The subjoined tabulation gives detailed information as to the work given by the members of the department of Civil Engineering during the past year.

INSTRUCTOR	COURSE	Units	Attendance		
			First Quarter	Second Quarter	Third Quarter
Blee and assistants...	Eng. 1. Linear drawing.....	1	116	48	36
Blee and assistants...	Eng. 2. Lettering	1	164	87	77
Cutter and assistants...	Eng. 3. Descriptive geom.....	3		144	
Wing, Moser.....	Eng. 10. Applied mechanics.....	5	83		
Moser.....	Eng. 11. Applied mechanics.....	5		63	
Moser.....	Eng. 11c. Mechanics of materials.....	2			6
Moser.....	Eng. 12. Hydraulics.....	5			65
Blee and assistants...	C. E. 20. Elementary surveying.....	5	82		47
Blee and assistants...	C. E. 21. Advanced surveying.....			33	
Blee and assistants...	C. E. 23. Special surveying.....	1-5	15	10	27
Fish.....	C. E. 30. Engineering economics.....	3			32
Fish.....	C. E. 31. Eng. estimates and reports.....	1-5	5	5	
Fish and assistants...	C. E. 40. Railroad surveying.....	5			23
Fish and assistants...	C. E. 41. Advanced railroad surveying.....	5	24		
Fish.....	C. E. 42. Special railroad surveying.....	3		1	
Fish.....	C. E. 43. Railroad construction.....	3		1	
Fish.....	C. E. 44. Railroad location.....	3			1
Wing.....	C. E. 50. Elements of design.....	3-4	16		
Wing.....	C. E. 51. Elements of design.....	5		17	
Wing.....	C. E. 52. Elements of design.....	5			16
Wing.....	C. E. 53. Elements of design.....	2	5		
Wing.....	C. E. 54. Structural details.....	5	16		
Wing.....	C. E. 55. Structural design.....	5		15	
Wing.....	C. E. 56. Structural design.....	3			8
Marx.....	C. E. 60. Water supply.....	5	12		
Marx.....	C. E. 61. Water supply.....	5		13	
Marx.....	C. E. 62. Water supply.....	5			8
Marx.....	C. E. 63. Sanitary engineering.....	5			5
Marx.....	C. E. 64. Canals, rivers and harbors.....	3-4	3	4	
Marx.....	C. E. Special.....	1	1		
Totals.....			542	441	351

CHARLES DAVID MARX,
Professor of Civil Engineering.

ECONOMICS

The teaching staff in Economics consisted of Murray Shipley Wildman and Albert Conser Whitaker, professors; Walter Greenwood Beach, acting professor; Eliot Jones, associate professor; John Bennet Canning, assistant professor; Margaret Mulford Lothrop and Nathaniel Sanders, instructors; George H. Auffinger, assistant in instruction.

Dr. Yamato Ichihashi was absent on leave throughout the year. This vacancy together with the vacancy caused by the resignation of Frederic B. Garver resulted in an invitation to Professor Walter G. Beach of Washington State College to come to Stanford for one year. This invitation was accepted and he joined the staff in January. Near the end of the year Mr. Beach was put on regular appointment with the title of Professor of Social Science. At the same time Eliot Jones was promoted to the rank and title of Professor of Economics.

Miss Margaret Lothrop returned to her work at Stanford in January, having been on leave for more than a year in the service of the Red Cross in France.

During the year Mr. Whitaker completed a very timely book on Foreign Exchange which was published by Appleton's Press.

The number of students who elected to take Economics as a major subject was 635. This is a much larger number than in former years and is attributed to the fact that the registration of first and second year students as majors in law has been discontinued. It is thought that a considerable number of these prospective law students would have registered as majors in Political Science if it had been generally known at the beginning of the year that a separate department for that subject had been established.

During the year 5 graduate students completed their work for the Master's degree and filed theses on the subjects stated below: Clara E. Howard, Americanization as a Social Problem; Harumi Okamoto, Chinese Currency; Mervyn Crobaugh, Democracy in Industry; Helen F. Fletcher, Four Phases of Child Labor in City Streets; Clinton F. Wells, The Status of Consumers' Co-operation on the Pacific Coast.

The courses of instruction offered and the attendance for the year are given in the accompanying table:

INSTRUCTOR	COURSE	Unit Hours	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Wildman, Jones.....	1. Elements of economics.....	5	140	132	197	32
Sanders, Auffinger..	3. Elementary accounting.....	3	103	83	50	17
Beach.....	4. Sociology.....	4		262		40
Jones.....	5. Railway transportation.....	5	193			
Canning.....	6. Statistics.....	5	97			
Whitaker.....	10. Accountancy of investment.....	4	93	105	110	
Whitaker.....	20. Corporation finance.....	4		76		
Beach.....	21. Public finance.....	4			115	
Beach.....	22. Labor problems.....	3		135		
Lothrop.....	23a. Social agencies.....	4		98		
Lothrop.....	23b. Social agencies.....	4			60	
Lothrop.....	23c. Social agencies.....	4				8
Lothrop.....	24. Economics and the home.....	4		15		
Wildman.....	26. Money.....	3	51			
Canning.....	27. Insurance.....	3		90		16
Canning.....	29. Intermediate accounting.....	4	22	25		
Jones.....	30. Water transportation.....	4			169	
Canning.....	31. Business administration.....	4				34
Beach.....	32. Sociology and social work.....	3				24
Jones.....	50. Railway problems.....	4		54		
Jones.....	51. Principles of economics.....	4	64			
Wildman.....	52. Banking.....	3				26
Beach.....	54. Immigration.....	3			118	
Canning.....	55. Advanced accounting.....	3		1		
Whitaker.....	56. Foreign exchanges.....	4			45	
Wildman.....	58. Investments.....	3			70	
Whitaker.....	60. Valuation.....	4	21			
Beach.....	68. Seminar in labor.....	3		16		
Jones.....	69. Seminar in transportation.....	4			9	
Wildman, Beach.....	70. Graduate seminar.....	2	4		9	8
Sanders.....	AI. Secretarial training.....	4	41	37	32	13
Sanders.....	AII. Secretarial training.....	4	20	23	28	6
Sanders.....	AIII. Secretarial training.....	4			31	
Totals.....			849	1152	1043	224

MURRAY SHIPLEY WILDMAN,
Professor of Economics.

EDUCATION

During the year 1919-20 instruction was given by Ellwood Patterson Cubberley and Lewis Madison Terman, professors; Percy Erwin Davidson and Jesse Brundage Sears, associate professors; William Martin Proctor, assistant professor; and William T. Root Jr., Fellow on the Buckel Foundation. During the summer quarter additional teaching assistance was obtained from Walter H. Nichols, Principal of the Palo Alto High School, and Dr. Arthur S. Otis, Director of Psychological Tests at Camp Grant, Illinois, during the first term; and from Will C. Wood, State Superintendent of Public Instruction for California, and Dr. J. Harold Williams, editor of the Journal of Delinquency and Director of Research in the Whittier State School, during the second term.

The summer quarter of 1920 saw a marked increase in the number of students coming for work in education, approximately one-sixth of the summer quarter enrolment being in this department. The number of students coming for advanced work in education was also greater, during both the regular year and the summer quarter, than ever before in the history of the department.

The courses of instruction and attendance for the year are given in the following table:

INSTRUCTOR	COURSE	Unit	Attendance			
			First Quarter	Second Quarter	Thrd Quarter	Fourth Quarter
Cubberley.....	1. Public education in America.....	3	84			
Sears.....	2. Intro. to the study of educ.....	3		53		
Davidson.....	4. Educational theory.....	5			20	
Davidson.....	12. Social and moral education.....	5		19		
Davidson.....	14. Logic of education.....	5		10		
Terman.....	17. General educ. hygiene.....	3				32
Proctor.....	20. Principles of secondary educ.....	3	50		63	
Proctor.....	22. Administrative prob. of sec. edu...	3		19		
Nichols.....	22. Administrative prob. of sec. edu...	3				26*
Wood.....	22. Administrative prob. of sec. edu...	2				22†
Proctor.....	25. Vocational guidance in high sch'ls.	2		24		
Nichols.....	26. Part-time education.....	2				6*
Proctor.....	27. Methods and management.....	2	39		44	
Proctor.....	28. Practice teaching.....	3	21	57	37	
Cubberley.....	30. Current problems.....	2				18
Davidson.....	31. Educ. and modern social problems	2½-5				20
Terman (Root)	33a. Educational psychology.....	4	32			
Terman.....	33b. Educational psychology.....	4		28		
Terman.....	34. Mental tests (Intro. course).....	4		7		8
Root.....	35. Educational statistics.....	5	21			
Otis.....	35. Educational statistics.....	3				25*
Root.....	35a. Corrections.....	2		9		
Williams.....	35a. Graphic methods in education.....	2				15†
Williams.....	37. Mental deficiency.....	1½				20†
Williams.....	37a. Juvenile delinquency.....	1				22†
Cubberley.....	39. History of education in America.....	3			12	

INSTRUCTOR	COURSE	Unit	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Cubberley.....	40. State school administration.....	4-5			19	
Cubberley.....	40. State school administration.....	3				36*
Wood.....	40. Problems in state school admin.....	2				20†
Cubberley.....	45. City school administration.....	4	31			
Sears.....	46. School surveys and educ. diagnosis	1½-3				21
Cubberley.....	47. The principal and his school.....	2				24
Sears.....	49. Pedagogical tests and measurem'ts	3			21	
Sears.....	49. Pedagogical tests and measurem'ts	2½-5				19
Sears.....	50. Elementary school curriculum.....	5			15	
Sears.....	51. Organ. and supervision of elem. ed.	2½-5				16
Proctor.....	53. Crit. and supervision of instruction	2			1	
Proctor.....	54. Thesis work.....	1		1		
Davidson.....	55a. Experimental pedagogy.....	3		2		
Davidson.....	55b. Experimental pedagogy.....	2½-5				7
Terman.....	57a. Intelligence tests and psychology of endowment.....	4		13		
Terman.....	57b. Intelligence tests and psychology of endowment.....	4			11	
Terman.....	60. Seminar in intelligence tests.....	2-4	5	3		
Terman.....	60. Seminar in mental tests.....	4				28
Proctor.....	61. Criticism and supervision of instr...	1				1
Davidson.....	62a. Special.....	1-3		3		2
Cubberley.....	62b. Special.....	3-10	3	1	6	
Terman.....	62b. Special.....	3-10		5		
Cubberley.....	62c. Special.....	1-10	6	1	6	4
Sears.....	62c. Special.....	1-10			4	
Sears.....	62d. Special.....	1-6½			1	5
Proctor.....	62e. Special.....	1-3	2	2	1	1
Sears.....	62e. Special.....	1-3		1		
Cubberley.....	62f. Special.....	2-10	2			
Terman.....	62f. Special.....	2-10		6		5
Terman (Root)	62f. Special.....	2-10			11	
Terman.....	Education thesis.....	4-5		3		
Cubberley.....	Education thesis.....	7	1			
Totals.....			297	267	272	403

*First half, summer quarter.

†Second half, summer quarter.

During the year Professor Cubberley finished a "History of Education" and a companion volume of "Readings in the History of Education," upon which he had been engaged for some time, and this will be issued the coming year. Professor Terman completed the construction of a new Scale for measuring the intelligence of high school pupils, and also a briefer edition of his guide for the Stanford Revision of the Binet-Simon Scale. Professor Sears and Professor Proctor, assisted by Dr. Williams, completed their work on the Boise, Idaho, School Survey, and their results were published in book form at the close of the year.

During the year Professor Proctor has done a very notable piece of work in connection with the Federal Board for Vocational Training, in

directing the training of something over 100 ex-soldiers whom the Federal Board for Vocational Training has assigned for study at this University. At first the Government sent about 20 men here as an experiment, and placed them under the direction of Professor Proctor. His guidance of the men proved so successful that the number was increased until more than 100 have now been assigned to this University.

ELLWOOD PATTERSON CUBBERLEY,
Professor of Education.

DIVISION OF GRAPHIC ART

During the year 1919-20 the teaching force of this division consisted of: Professor Arthur Bridgman Clark; Assistant Professor Chloe Lesley Starks; Instructors Emil Grebs and Rudolph P. Schaeffer; Walter A. Gores, Assistant.

The courses of instruction and attendance in each class are listed below:

INSTRUCTOR	COURSE	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Starks.....	1. Still-life.....	2-4	10			
Starks.....	2. Landscape.....	4-5			15	
Starks.....	3. Organic form.....	5		12		
Clark.....	4a. Design (structural).....	3-4	14			
Starks.....	4b. Design (for textiles).....	5		15		
Schaeffer.....	4b. Design (form and color theory).....	5				14
Schaeffer.....	4c. Design (applied to interiors).....	5				7
Clark.....	5. Art principles in house, furniture and city building.....	5		41		10
Clark.....	6a. Painters of the Renaissance.....	3	96			
Clark.....	6b. Painters of recent and present times.....	3		59		1
Clark.....	7a. Pottery.....	3-5	15			5
Clark.....	7b. Metal craft.....	3-5			8	5
Starks.....	7d. Textile decoration.....	5			12	
Clark.....	8. Perspective.....	5	18			
Starks.....	9. Science drawing.....	3-5	3	5		
Grebs.....	11. Commercial art and lettering.....	5	21			
Clark.....	12. Seminar.....	1	4			
Clark.....	13. Special subjects for Thesis.....	5	1	2		
Totals.....			182	134	35	42

During the year Professor Clark gave at the California School of Fine Arts in San Francisco a series of twenty-four lectures on painters of the Renaissance and recent times. Professor Clark has also completed for publication a book on "Art Principles in House, Furniture and Village Building."

The attendance in all classes shows a fifty-three per cent increase over the previous year.

Professor S. S. Seward, of the English Department, gave to the Division a fine war lithograph by the French illustrator, Forain.

ARTHUR BRIDGMAN CLARK,
Professor of Education,
Division of Graphic Art.

ELECTRICAL ENGINEERING

The departmental faculty was constituted as follows: Harris Joseph Ryan, professor; James Cameron Clark, associate professor; Henry Harrison Henline and Arnold Keller, Jr., instructors; Raymond Lewelling, research assistant. The courses of instruction given and the attendance in each were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance		
			First Quarter	Second Quarter	Third Quarter
Henline.....	1. Electricity in engineering.....	3		19	
Keller.....	2a. Electrical machinery, recitations.....	2	28		
Keller.....	2b. Electrical machinery, laboratory.....	3	29		
Keller.....	3. Electrical machinery, laboratory.....	4		33	
Ryan.....	4. Electrical engineering, lectures.....	3		31	
Henline.....	*(2a) 4 Electrical machinery, recitations.....	2			40
Henline.....	6. Electrical engineering, design.....	3	2		
Ryan.....	7. Advanced electrotechnics.....	4		2	
Henline.....	*(5) 8. Electric and magnetic circuits and research.....	3			9
Ryan, Henline..	9. High voltage laboratory practice.....	**	2		
Ryan.....	10. Seminar.....	1	2		
Ryan.....	11. Thesis.....	4		2	
Ryan.....	*(8) 11. Electrical engineering practice.....	5			14
Ryan.....	*(10) 19. Seminar.....	1			2
Henline.....	*(2b) 24. Electrical machinery, laboratory.....	3			38
Ryan.....	*(11) 41. Thesis.....	5			2
Totals.....			63	89	105

Ryan, Henline,
Lewelling..... Power transmission research..... Summer Quarter

*Course numbers changed beginning with the spring quarter.

**Number of units as arranged.

Mr. Clark was absent through the whole year on sabbatical leave. During such absence he held the position of engineer on special technical duty for the General Electric Co. He has thus experienced a most profitable year from the view-point of the department because of his association with engineers of prominence in the factories and projects of ranking importance wherein his appointed work fell.

Mr. Keller was appointed to a temporary instructorship for the two years, 1918-19 and 1919-20, to man the department during the absence of Mr. Ryan in 1918-19 and of Mr. Clark in 1919-20. Mr. Keller had not been in rugged health for a number of years and could not be accepted by the War Department for military service. It was only thus that he was found available for service in the department during war time. He appeared to have ample strength to carry a normal amount of work. His health, however, began to fail during the early spring and he resigned April 17th. Later at the home of his parents he encountered a complete breakdown and died June 20, 1920. Mr. Keller was graduated from Stanford in Electrical Engineering in 1915. He had an exceptionally fine personality, was a "born" teacher and one of the best instructors we have ever known.

With the beginning of the year the department renewed the research studies of the durability of high voltage power transmission line insulators that were begun in 1916 and interrupted by the war.

The war emphasized severely the necessity for the development of hydro-electric power for the conservation of fuel and water for irrigation. It caused approximately a rise of 300 per cent in the cost of the requisite long power transmission lines. A corresponding rise in the line voltage is the only available expedient by which the power transmission costs can be correspondingly lowered in whole or in part. Economics demands, therefore, a great advance in the transmission line voltage to be employed in the new conservation power projects. The common long distance transmission voltage of today is 110,000—a few extra long transmissions are operated at 150,000. A year ago the movement began among transmission engineers to determine upon the feasibility of a line voltage of 220,000 for the major projects of the immediate future. Such undertaking to double the trunk-transmission line voltage now in general use is requiring today the best efforts of all technicians who serve in this field. In behalf of the University the department has volunteered to the full extent of its resources in energy and equipment to assist in the determination of fundamentals which are not sufficiently well understood and which have attained importance in the undertaking to double the trunk-line voltage.

The research work undertaken in the department during the year closing September 1, 1920, was virtually all applied to the above problems in the fundamentals of power transmission as follows:

1. Failure of the cap and pin type of suspension insulator through temperature cycles. Ryan. (*Electrical World*, Vol. 75, p. 254, Jan. 31, 1920, *Journal of Electricity*, Vol. 44, pp. 370-371. *Proc. Pasadena Convention, National Electric Light Association*, May 18-22, 1920; T5-20, pp. 16 to 20.)

2. The design characteristics of long suspension insulators (available for the insulation of 220,000 volt lines). Ryan and Henline. (Journal of the American Institute of Electrical Engineers, Vol. XXXIX, p. 631, July, 1920.)

3. The nature of suspension insulator flash-overs due to lightning and kindred phenomena.

a. In the laboratory.

b. In the field on long transmission lines. Ryan and Henline. (In progress.)

4. Breakdown of insulating oils and materials immersed therein. Ryan and Henline. (In progress.)

5. Conductivity of high voltage insulating oils with special reference to ion-alignment characteristics. Harry J. Rathbun, Elwell graduate scholar, and Charles D. Howe, graduate student. (To be published.)

6. Surface creepage and high voltage insulation. Takeshi Nishi, Assistant Professor of Electrical Engineering, Tokyo Imperial University, graduate student. (To be published in Japan and the United States.) Journal of the American Institute of Electrical Engineers, Vol. XXXIX, p. 649, November, 1920.

HARRIS JOSEPH RYAN,
Professor of Electrical Engineering.

ENGLISH

The staff of the department for the year 1919-20 consisted of William Herbert Carruth¹, Raymond MacDonald Alden², John Strong Perry Tatlock³, Lee Emerson Bassett¹, professors; Tom Peete Cross, acting professor; Henry David Gray³, William Dinsmore Briggs¹, Samuel Swayze Seward⁴, associate professors; Howard Judson Hall⁴, Everett Wallace Smith⁴, Frances Theresa Russell⁴, assistant professors; Arthur Garfield Kennedy⁴, Edith Ronald Mirrielees, Elisabeth Lee Buckingham⁴, Harriet Bradford⁴, Miller L. McClintock, Margery Bailey⁴, Warren Paul Staniford², instructors; Irving Pichel, lecturer.

The superior numbers indicate the quarter of regular vacation. *Mr. Hall returns to Stanford after service with the Army Educational Corps in France and a year of research on colonial literature; Mr. Kennedy is promoted to an assistant professorship; Mr. Paul Warren Staniford succeeded Mr. Hoffman as instructor in journalism. Professor Tom Peete Cross, of the University of Chicago, served as professor in the first term of the summer quarter 1920, and Mr. Irving Pichel, of New York, as lecturer on dramatic art in the second term.

The number of major students enrolled in the department was 240, of whom 39 were graduates. Of this number 61 were enrolled in the summer quarter, 24 of them graduate students.

Twenty-six students received the degree of A. B. and six the A. B. preparatory to journalism; eight received the degree of A. M.

The recipients of the A. M. degree presented and filed in the University Library theses as follows:

Geneva K. Davis, Roman Catholic Ideas in the Religious Lyric of the Elizabethan Age; M. L. McClintock, The Character of Diomedes in Medieval Literature and its Ancient Sources; Mary A. Polk, John Galsworthy, Social Critic and Artist; Charlotte W. Rideout, Boccaccio's *De genealogia deorum* as a Possible Source in Chaucer's *Troilus and Creseide*; H. R. Stevens, The Precursors of Extra-Metrical Elements in Contemporary Poetry; Sylvia C. Wedel, The Pronouns of Address in the King James Version of the Old Testament.*

* Two theses of students receiving degrees at Christmas were included in the previous annual report.

Attendance Report 1919-20:

INSTRUCTOR	COURSE Title No.	Units	Attendance				
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter	
Bailey, Bradford, Carbaugh, Chase, McElin.....	A. Elementary composition, (12 sections).....	1	84	43	29	.....
Seward, Hall, Smith, Bailey, Mirrielees....	2. Composition (16 sections)....	3	175	154	90	32	
Bassett, Buckingham	4. Vocal expression (6 secs.)....	3-4	35	30	18	29	
Buckingham	5. Reading aloud.....	3		20			
Bassett	6. Practical phonetics.....	1		8	11		
Bassett, McClintock	7. Extempore speaking.....	3	40	33	33	28	
Buckingham	8. Outlines of English lit.....	5			56		
Hall	9. American literature.....	5				21	
Bailey, Mirrielees....	10. English classics.....	5	86	111	21	5	
Seward	11. Introduction to poetry.....	5			30		
Carruth, Alden, Tatlock, Gray, Russell, Mirrielees, Bailey, Bradford, Sutliff, P.A. Martin, H. C. Brown.....	13. Free reading (27 sections)....	2	48	48	48	22	
Russell	16. Advanced composition.....	4	24	24			
Smith	17. News writing.....	3	26	28			
Bassett	18a. Staging of plays.....	1½				15	
Bassett	18b. Interpretive reading.....	1½				6	
Buckingham	19a. Dramatic literature.....	3	37				
Bassett	19b. Vocal interpretation.....	3		19			
McClintock	20. Practical debate.....	1-2	29	38	7		
Seward	22. Victorian prose.....	3		22			
Seward	23. Victorian poetry.....	3			9		
Russell	24. English Bible.....	3	38				
Alden, Gray	25. Shakespeare.....	4		49	32	15	
Russell	27. Browning.....	3		36	6		
McClintock	32. Argumentation.....	2	39	6		7	
Gray	34. Play construction.....	3				5	
Carruth	35. Verse writing.....	3			8		
Mirrielees	36. Short story writing.....	2			28		
Russell	37. Essay writing.....	3-4			18		
Smith	40. Editorial writing.....	2			12		
Smith	43. History of journalism.....	5			21		
Smith, Staniford	44. Practical reporting.....	2-3	26	11	24	10	
Smith, Staniford	45. Editorial management.....	1-3	9	7	11	2	
Smith, Staniford	46. Advertising.....	5			104		
Bassett, McClintock	50. Public speaking (4 secs.)....	3	16	31	28		
Bassett	51. Public reading.....	2		10			
McClintock	52. Oral debate.....	2				7	
Bassett	53. Teachers' course public speaking.....	2			7	10	
Pichel	54. Staging of plays.....	3				20	
Pichel	54b. Theatrical laboratory.....	1-2				8	
Kennedy	55. Old English.....	4		10			
Kennedy	56. Hist. of English language....	3	19				

INSTRUCTOR	COURSE Title No.	Units	Attendance				
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter	
Tatlock.....	58. Chaucer (elementary).....	3		34		15	
Briggs.....	60. Spenser.....	3			18		
Carruth.....	65. Comparative literature.....	3		15		6	
Carruth, Murray, Elmore, Rendtorff, de Vries.....	66. National epics.....				14		
Carruth.....	67. Hist. of prose fiction.....	3		31			
Gray.....	69. Modern novel.....	5	67				
Briggs.....	70. English drama to 1642.....	5				14	
Gray.....	73. Post-Vict. poetry.....	4		8			
Russell.....	74. English essay.....	3	20				
Russell.....	75. Contemporary essayists.....	3		22			
Cross.....	76. Celtic literature.....	2 1/4				9	
Pichel.....	77. Influence of the theater.....	3				9	
Cross.....	78. Medieval revival.....	2				10	
Briggs.....	82. English literature to 1700.....	4		17			
Alden.....	83. English lit. to 1780.....	4	51				
Alden.....	84. English lit. to 1832.....	4			43		
Briggs.....	87. Life and thought of 16th and 17th centuries.....	4		15	10		
Carruth.....	90. American poetry in relation to Europe.....	4			40		
Kennedy.....	93. Beowulf.....	4			3		
Kennedy.....	94. Middle English.....	3		14			
Carruth, Gray, Seward.....	98. Teachers' course.....	3-2	13	9		6	
Kennedy.....	101. Introd. to Eng. philology.....	3	6				
Alden.....	103a. Tragedy.....	4			7		
	103b. Mod. tragedy.....	4				9	
Seward.....	104. Comedy.....	4	10	3		7	
Alden.....	105. Elizabethan lyric.....	4	7				
Carruth.....	107. Idylls of the King.....	3-5				6	
Tatlock.....	110. Advanced Chaucer.....	3	8				
Gray.....	112. Shakespeare.....	4				4	
Gray.....	115. Webster.....	4	4				
Carruth, Kennedy.....	117. Journal club.....	2		3	3		
Tatlock.....	118b. Early English seminary.....	3				4	
Carruth, Alden, Tatlock, Gray, Kennedy, Briggs.....	Theses.....	3-9	3	4	8	2	
Totals.....			920	803	807	336	

With the return of Mr. Smith to the charge of the work in Journalism all branches of departmental work are restored to a normal condition. The summer quarter continues to justify itself by the large proportion of mature and advanced students. Mr. Stuart Walker, who was engaged to lecture on Theatrical Management, felt obliged to ask his release; this was made possible by the engagement of Mr. Irving Pichel, who filled the breach admirably. Professor Cross, of the University of Chicago, supplied a want in our curriculum with courses on Celtic literature. Professor Carruth continued through the spring his lectures on Religion in the English Poets at the Pacific Unitarian School for the Ministry. He has published in *School and Society* an article on "The Status of Comparative Literature," and sundry poems in various journals. Several of the lectures on Religion in the English Poets have appeared during the year in the *Christian Register*.

Professor Alden has in press with the Scribner Company two books, "Critical Essays of the Early 19th Century," and "Poems of the English Race," an anthology. He has printed also in *Studies in Philology*, "Lyrical Conceits of the Metaphysical Poets," and in *The Drama* a "Study-List on Modern English Drama from the Time of the Restoration." Professor Alden has been appointed Pacific Coast representative of the Modern Humanities Research Association.

Professor Tatlock has continued active work on the Concordance to the Works of Chaucer with the support of the Carnegie Foundation. During the year 1919-20 the forty-seven volunteer collaborators in various parts of the country have finished making the slips, a quarter of a million and more in number. A staff of assistants have twice verified and edited these, and during the summer four assistants have completed about one-half of the alphabetizing. Miss Alice Hays, of the Stanford Library, has generously undertaken to prepare slips of specimens of words not printed in full, and another volunteer with Dr. Kennedy will prepare slips for variant readings. During December and January Professor Tatlock passed a week lecturing at Haverford College, and gave also four lectures at Vassar College and the University of Minnesota. He is President of the Philological Association of the Pacific Coast, a member of the Council of the Association of American University Professors, of the Simplified Spelling Board, and Research Associate of the Carnegie Institution. He has published in *The Romanic Review* an article on "Purgatorio xi, 2-3 and Paradiso xiv, 30," in *Modern Language Notes* "Never Less Alone than when Alone," in the *Journal of English and Germanic Philology* a review of Grimm's *Astronomical Lore in Chaucer*, and in the *American Journal of Philology* a review of Wells' *First Supplement to a Manual of Middle English*; also in the *Stanford Cardinal* an article on "Inter-collegiate Athletics at Present."

Professor Bassett has devoted much time to his duties as Chairman of the Committee on Public Exercises.

Professor Gray is President of the Affiliation of California Committees for Better Films, is a member of the National Committee for Better Films,

and has helped to organize local societies for this purpose. During the spring quarter he addressed the National Board of Review on Raising the Standard of Censorship, and on The Outlook in California. He delivered a course of lectures on Modern Dramatists before the Institute of Arts and Sciences of Columbia University; also a paper before the American Modern Language Association at Columbus on "Some Indications that 'The Tempest' was revised." Professor Gray has published "The Titus Andronicus Problem" in Studies in Philology, "The Sources of the Tempest" in Modern Language Notes, "Russian Drama in New York," "Three Plays from Provincetown," "A Letter of Protest," in The Freeman, "Did Shakespeare Write a Tragedy of Dido?" in The Modern Language Review, "Dramatic History Repeats Itself" in The Freeman.

Professor Seward has received in further recognition of his services under the Belgian Relief Commission the Belgian Medal of King Albert.

Through the appointment of an Instructor in Dramatic Art a beginning has been made toward unifying and elevating the dramatic activities of Stanford students. Mr. Gordon Davis, Stanford 1920, an actor of experience, has undertaken the leadership.

Professor Hall has published "Two Book-lists" in the Publications of the Colonial Society, and a communication on Colonial book inventions in the Proceedings of the Massachusetts Historical Society.

Professor Russell published about the beginning of the current year "Satire in the Victorian Novel," a volume which has attracted merited attention.

Professor Kennedy initiates the Language and Literature branch of the Stanford University Publications with "The Modern English Verb-Adverb Combination."

Miss Bailey has delivered three lectures and recitals of British Folk-songs before clubs and high schools, and a lecture with readings in translations by herself on the Spanish Maeterlinck, Martinez Sierra, before the Century Club, San Francisco.

Mr. Staniford has published in The American Legion Weekly "Vladivostock and Points West," in the Christian Herald "Unfaithful Ambassadors," in the Legion Weekly "Golf Hounds and Wheel Chairs," and in Western Advertising "Truant Eyes of Women."

Mr. Staniford resigns from Stanford to take charge of the advertising and sales promotion of the store for men of The Emporium in San Francisco. His service to Stanford has been valuable. His zeal assisted largely in securing the eighteen lectures on advertising given to the students of the department by generous advertising men of San Francisco business houses.

The English department acknowledges the assistance of Professors H. C. Brown and P. A. Martin and Miss Helen Sutliff in conducting the course in Free Reading.

WILLIAM HERBERT CARRUTH,
Professor of Comparative Literature.

ENTOMOLOGY AND BIONOMICS

The faculty of the department was composed of Vernon Lyman Kellogg, professor; Rennie Wilbur Doane, associate professor; Mary Isabel McCracken, assistant professor; Gordon Floyd Ferris, instructor.

The number of major students was thirteen, of whom one was a graduate. Courses were given as shown in the accompanying table, with attendance as indicated:

INSTRUCTOR	COURSE	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
McCracken.....	1a. Elementary entomology.....	5	20			
Ferris.....	1a. Elementary entomology.....	5				10
McCracken.....	1b. Elementary entomology.....	5	1	27		
McCracken.....	1c. Elementary entomology.....	5			15	
McCracken.....	2. Classification.....	5			6	
McCracken.....	4. General entomology.....	3	23			
Doane.....	5. Insects and disease.....	2		42		
McCracken.....	6. Apiary.....	3			9	
Ferris.....	8. Aphids.....	3	3	1		
Doane.....	9. Forest insects.....	3	2			
Doane.....	10. Orchard and garden insects.....	3			2	
Ferris.....	12. Technique.....	3		8		
Doane.....	13. Advanced economic.....	3	2	2	2	
Doane.....	14. Advanced biologic.....	3		1		
Doane.....	15. Bionomics.....	2	110			
McCracken.....	16a. Genetics.....	2			28	
Doane.....	Graduate work.....	7	1	1	1	
Totals.....			162	82	63	10

Professor Kellogg was absent on leave for the year, doing active work with the National Research Council. He was made Secretary of that Council and in order that he might devote his whole time to this work he resigned from the University in June, 1920, the Department and the University thus losing the help and the inspiration of one of the foremost scientists of the day.

Associate Professor Doane again served as a member of the Board of Trustees for the Matadero Mosquito Abatement District; and, with the aid of a student, began work directed toward the control of the Argentine ant on the campus. The summer was spent in studying the insects and the condition of the vegetation in the vicinity of smelters and chemical plants in Utah, Arizona, and several Atlantic Coast and Middle West States.

Assistant Professor McCracken spent the summer quarter mainly in the care of the University Apiary and in research in heredity—rearing and breeding silkworms for the purpose. A few weeks were spent in adding to the department's collection of insects—mainly Hymenoptera.

A large supply of silkworm eggs representing five races of silkworms were received by the department from the Imperial Sericultural Institute of Tokyo through the courtesy of its Director, Professor I. Honda and Professor S. I. Kuwana, Director of the Agricultural Department of Japan, for use in the research laboratories.

Mr. Ferris has devoted much of his time to the department collection of Coccidæ (scale insects) which is now second only to the National collection in size and number of types. During the year he has published seven papers on Coccidæ, two on Anoplura and two on Diptera. One of the papers on the Anoplura is the first of a series which, when completed, will make a monograph of this group.

RENNIE WILBUR DOANE,
Associate Professor of Entomology.

GEOLOGY

The staff of the Department of Geology for the year 1919-20 consisted of: James Perrin Smith (paleontology), Austin Flint Rogers (mineralogy), Cyrus Fisher Tolman Jr. (economic geology), Bailey Willis (geology); professors; Mrs. Ida S. Oldroyd, curator in conchology, Mr. T. S. Oldroyd, assistant curator in conchology, Mr. W. H. Haines, assistant in mineralogy, Mr. F. P. Vickery, fellow in geology, and Mr. S. F. Adams, fellow in economic geology.

The instruction in the summer quarter of 1920 was given by Mr. C. F. Tolman Jr., in charge of the field geological survey of a portion of Ventura County, assisted by Mr. A. A. Curtice, Mr. S. F. Adams, Mr. W. H. Haines, and Mr. P. L. Henderson.

The instruction in geology at the University, during the summer quarter of 1920, was given by Mr. Stephen Taber of the class of 1906, now professor of geology at the University of South Carolina.

GEOLOGY

The courses in geology at the University were given during the summer quarter of 1919 by Mr. Willis. On account of his absence during the autumn quarter, no courses in geology were given in that quarter, but they were concentrated in the winter and spring.

The courses of study and attendance are as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			Winter	Spring
Willis.....	1a. Geography.....	3-5	136	
Willis.....	1b. Geography.....	3-5		215
Willis.....	1. Dyn. Geology.....	5	113	
Willis.....	2. Dyn. Geology.....	3-5		75
Totals.....			249	290

In 1920 Mr. Willis was in residence only during the winter and spring quarters. He has been engaged in the prosecution of research work in structural geology, and has published a paper entitled "Discoidal Structure of the Lithosphere," Geol. Soc. of America Bull., 1920. He also has in an advanced state of preparation a paper entitled "Structure of the Pacific Ranges of California."

During the summer quarter the following courses were given by Dr. Stephen Taber, Acting Associate Professor of Geology, with attendance as noted:

INSTRUCTOR	No.	COURSE	Unit Hours	Attendance
				Summer
Taber.....	1.	Geography.....	5	19
Taber.....	1a.	Geology.....	5	22
Taber.....	8.	Geology.....	2	3
Total.....				44

ECONOMIC GEOLOGY

Courses in economic geology were given by Mr. C. F. Tolman, assisted by Mr. S. F. Adams.

SUMMER QUARTER, 1919:

Geology 4—Field geology 16 Students
 Geology 5—Topographic geology 16 Students

AUTUMN QUARTER, 1919:

Mr. Tolman was absent. The laboratory was kept open under the charge of Mr. S. F. Adams.

Economic geology 4—Special course..... 3 Students

WINTER QUARTER, 1920:

Economic geology 1—Non metals 43 Students
 Economic geology 4—Special courses 3 Students

SPRING QUARTER, 1920:

Economic geology 2—Ores 44 Students
 Economic geology 3—Seminar in oil..... 9 Students
 Economic geology 5—Special courses 3 Students

Mr. Tolman continued his studies in the Foothill Copper Belt Deposits.

With the assistance of Mr. F. P. Vickery he is preparing the geological folios on the Tesla-Pleasanton, Mount Hamilton and San Jose Quadrangles. During the autumn quarter he had the opportunity to carry on extensive field work in the Coalinga region, the results of which have a bearing on the structural problems of the Coast Ranges and the origin of the oil.

Mr. S. F. Adams has completed, as a master's thesis, a detailed microscopic study of quartz as a gangue material of fissure veins, which is to be published shortly.

MINERALOGY

The courses in mineralogy were given by Mr. A. F. Rogers, assisted by Mr. W. H. Haines.

COURSE	Attendance		
	Autumn	Winter	Spring
Mineralogy 1. Common minerals and rocks.....	43		40
Mineralogy 2. Crystallography.....		38	
Mineralogy 3. Systematic min.....			27
Mineralogy 4. Petrography.....			8
Mineralogy 5. Advanced min.....	2	2	
Totals.....	45	40	75

Mr. Rogers has taken part in the formation of a new society to be known as the Mineralogical Society of America.

Mr. Rogers has also been engaged in a mineralogical study of fossil bone and will publish his results in the Williston Memorial Volume; and in field work on the metamorphic rocks of California.

PALEONTOLOGY

The instruction in paleontology was given by Mr. J. P. Smith.

COURSE	Attendance		
	Autumn	Winter	Spring
Paleontology 1.....	79		
Paleontology 2.....		72	
Paleontology 3.....			58
Paleontology 4.....	13		
Paleontology 5.....		8	
Paleontology 6.....			6
Paleontology 7.....	77		
Paleontology 8.....		24	
Paleontology 9.....			24
Paleontology 10.....	11	7	16
Totals.....	180	111	104

In addition to his work in teaching, Mr. Smith has spent his free time in completing a monograph for the U. S. Geological Survey, on the Upper Triassic faunas of America. He has also spent part of the vacations of 1919-20 in geologic explorations in Oklahoma; and in California and Nevada, in connection with the U. S. Geological Survey.

Mr. F. P. Vickery has prepared a thesis for the degree of Doctor of Philosophy on the "Stratigraphy and Paleontology of the Tesla Region."

Mr. R. H. Palmer has prepared a thesis for the degree of Doctor of Philosophy on "The Pliocene of Southern California." Mrs. Oldroyd has completed a monograph on the "Molluscan Fauna of Puget Sound."

JAMES PERRIN SMITH,
Professor of Paleontology.

GERMANIC LANGUAGES

The department faculty for the year 1919-20 consisted of William Alpha Cooper, George Hempl, Karl Gustav Rendtorff, professors; Bruno Boezinger, assistant professor; and Sophia Juliane Wolters, assistant in instruction.

The following courses were given, with attendance as noted:

INSTRUCTOR	COURSE	Units	Attendance			
			Autumn Quarter	Winter Quarter	Spring Quarter	Summer Quarter
Wolters.....	1, 2, 3. First year.....	5	82	67	64	.....
Boezinger, Rendtorff,						
Wolters.....	21, 22, 23, 24. Second year.....	5	11	15	8	4
Boezinger, Wolters.....	25, 26, 27, 28. Scientific.....	3	34	29	17	4
Boezinger, Wolters.....	29. Directed reading.....	1-3	24	34	32	8
Cooper, Rendtorff.....	31, 32, 33, 34. Third-year reading.....	3	9	7	7	2
Boezinger.....	41. Third-year composition.....	2	6	7		
Boezinger.....	51. Advanced composition.....	1-2	2		3	.....
Cooper, Rendtorff.....	61. Directed reading.....	1-2	32	19	30	11
Rendtorff.....	62. Individual composition.....	1	1	2		
Cooper.....	75. Goethe's lyrics and ballads.....	3				5
Cooper.....	76. Goethe's Faust.....	4	7			
Rendtorff.....	78. Schiller's works.....	3			4	
Rendtorff.....	82. 19th Century literature.....	3			4	
Cooper.....	87. Development of the novel.....	3				3
Rendtorff.....	91. History of Germany.....	3	22			
Rendtorff.....	92. History of German civilization.....	2		13		
Boezinger.....	101. Conversation.....	1	4	10		2
Cooper.....	105. Syntax.....	2			4	2
Hempl.....	106. Modern language teaching.....	1	9			
Rendtorff.....	124, 125. Middle High German.....	2		4	2	
Hempl.....	131. Phonetics.....	3		5		
Hempl.....	133. Genesis of writing.....	2	2			
Hempl.....	136. Comparative grammar of German and English.....	3			6	
Cooper, Rendtorff.....	151. Master's thesis.....	2-3	2	3	3	2
Totals.....			247	215	184	43

Professor Cooper took his regular quarter vacation during the winter, the other members of the staff during the summer, with the exception of Miss Wolters, who was on duty all four quarters.

The total number of major students registered in the department was eleven, of whom five were graduate students. The degree of Bachelor of Arts was conferred upon two students. The degree of Master of Arts was conferred upon: Philip Hofmann, thesis, "Pronouns of Address in the Works of Young Goethe;" Esther M. Frazer, thesis, "Wilhelm Heinse's Italian Journey."

At the beginning of the winter quarter the department was moved from its old quarters to the recently vacated Administration Building, which had been slightly remodeled to suit its new purposes. The new location affords not only adequate office room, but also the proper variety of recitation and lecture rooms, including a consulting library and a slide-lecture room, for all of which the department is deeply grateful.

WILLIAM ALPHA COOPER,
Professor of German.

GREEK

The department faculty for the year 1919-20 consisted of Augustus Taber Murray, professor; Ernest Whitney Martin, associate professor; and Mrs. Hallie Watters and Miss Hazel Hansen, assistants. Dr. Martin returned from his work in Greece and took charge of the work of the department for the autumn quarter, when Dr. Murray was absent on leave.

The following courses were given:

INSTRUCTOR	COURSE	Credit Units	Attendance		
			Autumn	Winter	Spring
Martin.....	1. Elementary.....	5	4		
Martin.....	4. Homer.....	4	3		
Martin.....	13. Individual work.....	2-4	3		
Martin.....	22. Greek literature.....	3	40		
Murray.....	1. Elementary.....	5		3	
Martin.....	2. Xenophon.....	4		3	
Murray.....	6. Introductory poetry.....	4		3	
Martin.....	13. Individual work.....	2-5		5	
Murray.....	19. Greek tragedy.....	3		31	
Martin.....	22. Greek literature.....	3		73	
Martin.....	24. Greek history.....	3		38	
Murray.....	26. Greek sculpture.....	3		11	
Martin.....	1. Elementary.....	5			7
Murray.....	2. Xenophon.....	5			2
Murray.....	9. Aeschylus.....	3			5
Martin.....	13. Individual work.....	2-5			8
Murray.....	17. Teachers' course.....	2			3
Murray.....	20. New Testament literature.....	3			38
Martin.....	31. Greek literature.....	3			83
Totals.....			50	167	146

In addition, in the summer quarter, Dr. Murray conducted a course for four advanced students in Aeschylus, lectured thrice weekly on Greek Masterpieces to a class of 22, and directed the work of two graduate students, one in the study of the Greek Testament, and the other in Plato. One student read in Homer four times weekly, and Miss Hansen conducted an elementary class of four students.

AUGUSTUS TABER MURRAY,
Professor of Greek.

HISTORY

The faculty of the department for the year consisted of: Ephraim Douglass Adams, Arley Barthlow Show, Edward Krehbiel, Payson Jackson Treat, professors; Edgar Eugene Robinson, Percy Alvin Martin, associate professors; Yamato Ichihashi, Reginald George Trotter, assistant professors; Frank Marion Russell (State College of Washington), instructor; Henry Barrett Learned, lecturer, winter and spring quarters; Frank Alfred Golder (State College of Washington), acting professor, summer quarter.

Courses in history were given also by Associate Professor Elmore of the department of Latin, and Professor Rendtorff of the department of German.

The graduate student assistants during the year were: Mary Acheson, George Hurach Cloud, Gladys Blanche Footman, Eldon Griffin, William Henry Handley, John Gaylord Howes, Richard Henry Piatt, Abraham Zvenigrad.

In October, 1919, a new member of the department, Assistant Professor Trotter, arrived and began instruction in the field of British history. In addition to the usual courses in English history, Mr. Trotter offered a course in Canadian history, thus opening the work in a field which it is intended to develop further. The library materials for this field have been in process of gathering for several years past and are now fairly complete, including such notable collections as the one thousand volume set of the Canadian Sessional Papers, and the Canadian Hansard. Mr. Trotter is an A. B. Yale 1911; has taught several years at the Thacher School at Ojai, California, and has just completed his graduate work at Harvard University for the degree of Ph. D. In November he read a paper before the Pacific Coast Branch of the American Historical Association on "The Federalization of British North America."

In December, 1919, Professor Krehbiel, who had been on leave of absence during the autumn quarter, resigned his position in the University and left academic work to go to the business firm of Weinstock, Lubin & Company, at Sacramento, as "industrial engineer." Mr. Krehbiel had been a member of the department since 1909, and as a skilful teacher had greatly developed the work in Modern European history, while in recent years, as an earnest advocate of international peace, he had both created a student following, and had become widely known throughout the State. In the emergency created by his resignation the department was fortunate

in securing for the winter and spring quarters, Dr. H. Barrett Learned, of Washington, D. C. Dr. Learned graduated at Harvard University in 1890, took the degree of Ph. D., at Yale University in 1909, and has taught at the University of Chicago, at Harvard, and in the Sheffield Scientific School at Yale. In recent years he has resided at Washington, D. C., engaged in research and writing in the historical field.

Permanent arrangements in the field of Modern European history have not yet been made, except in the appointment, for a portion of the work, of Associate Professor Ralph Haswell Lutz, who comes in October, 1920, to carry a few classes and to take charge, as Co-Director with Mr. Adams, of the Hoover War Collection. Mr. Lutz took his A. B. degree at Stanford in 1906, the LL. B. degree at the University of Washington in 1907, and the degree of Ph. D. at Heidelberg, Germany, in 1910. He was an instructor and later Assistant Professor of European History, at the University of Washington from 1911 to 1917, but for one year, while on leave from that institution, lectured at Stanford, 1915-16. In April, 1917, he entered the officers' training camp at the Presidio, was commissioned 2nd Lieutenant in August, and was sent to France with the Headquarters Staff of the 40th Division. Later he was assigned as 1st Lieutenant to G2 of the Army Staff, and after the armistice was sent to Berlin with the American Military Mission. While stationed in Berlin he rendered great service to the Hoover War Collection and in September, 1919, upon being demobilized, travelled through the central European countries as far east as Bulgaria, gathering materials for the Collection.

Mr. Treat acted as Executive Head of the department for the autumn and winter quarters. He has continued his writing as contributing editor of the Journal of International Relations, has been active as a Director of the Sierra Club, and has made seventeen public addresses on subjects connected with the Far East.

Mr. Robinson has been on sabbatical leave throughout the year, the greater portion of the time being spent at Yale University where he gave a lecture course and some advanced work in Contemporary American history. The balance of his time was spent at Harvard University, in Washington and New York gathering materials on the history of political parties.

Mr. Martin, in December, 1919, attended the meetings of the American Historical Association at Cleveland and was one of the University delegates at the meeting in Cleveland of the Association of American University Professors. In January, 1920, he served as secretary of the Brazil Conference Committee of the Second Pan-American Financial Conference at Washington. In December, 1919, he was elected a member of the Editorial Board of the Hispanic Historical Review. He has been appointed Chairman of the committee of the American Historical Association for participation in the Historical Congress to be held in Rio de Janeiro in 1922 in connection with the Brazilian Centenary Celebration.

Mr. Ichihashi has been on leave of absence since October, 1919. He was interpreter for the Japanese delegation at the International Labor

Congress in Washington in the fall, spent the summer in Japan and is now in Paris, pursuing historical studies.

During the absence of Mr. Adams in Europe Professor Frank Russell of the State Agricultural College at Pullman, Washington, was secured for the year 1919-20, to carry a part of the regular instruction of Mr. Adams and Mr. Robinson.

The summer quarter work of 1920 was carried by Mr. Adams and Mr. Show of the regular staff, and Professor Frank A. Golder of the State Agricultural College at Pullman gave courses in Modern European history. In September Mr. Golder resigned his position at Pullman, and went to Europe on a year's mission for the Hoover War Collection, his plan being to work, principally, in the Baltic countries and those states bordering on Russia, which Mr. Lutz was unable to reach.

The Hoover War Collection is the result of Mr. Hoover's interest and generosity. Early in the war, at Mr. Adams' suggestion, he arranged a docket system of records for the work of the Belgian Relief Commission with the purpose of ultimately making Stanford University the depository of all the records of this, the most notable philanthropic enterprise in all world history. The records of the Rotterdam office are now in the Library, and the other files are to follow. In May, 1919, a cable was received from Mr. Hoover pledging a gift of \$50,000 if a suitable mission were sent at once to Paris to organize a general collection on the War. The President of the University commissioned Mr. Adams to undertake this work, and he started at once for France, arriving early in June. No adequate description of the Collection is possible in this report. Briefly, its primary value will consist in materials on the economic, social and political aspects of the war period, rather than in materials for military history, and it will cover all the nations of the world whether belligerent or neutral. Already by purchase and by gift in many countries some 70,000 titles have been secured. The collection, it is believed, will not be equalled in America, save perhaps by that of the Library of Congress, and with that institution a special arrangement has been made for a first choice exchange of duplicates, when desired by either collection. This arrangement has already brought as a gift the war files of over thirty German newspapers to the Hoover Collection.

Mr. Adams maintained headquarters in Paris until October, making brief visits to Berlin and Brussels, then transferred headquarters to London, until December, when he returned to Stanford. He established European agencies for gathering materials, secured the assistance of experts for purchases, and himself solicited many of the notable gifts from governments. Mr. Lutz was sent on the Eastern trip through Poland, Hungary, Austria, Serbia, and Bulgaria, and worked also in Switzerland. On returning to Stanford, Mr. Adams did not resume University instruction until the spring quarter, being busy in organizing the materials already beginning to come in to the Library. He now continues as Director of the Collection in larger plans, but Mr. Lutz is the active Director in charge.

Mr. Golder is now in Europe with a special mission for the Collection in the Baltic countries. In addition many scholars of this and other

universities have volunteered their services—as Professor Espinosa of the Romanic Languages Department, now in Spain, Professor Rendtorff of the German Department, now in Germany, and Mr. Porter, a graduate student of the University of California, now in Czecho-Slovakia. The importance of Mr. Hoover's gift to the University and to American historical research can not be over estimated. Moreover the work to date of gathering materials is but a beginning, for, to use Mr. Hoover's own expression, "It must go on for the next twenty-five years," and while originally strictly limiting his gift to \$50,000 he has now removed that limitation. The present arrangement, made by Mr. Hoover, is that funds are to be provided on call by Mr. Adams, who determines expenditures, but makes financial reports from time to time to the President of the University.

During the absence of Mr. Robinson, who has had charge of expenditures from the Borel Fund, little has been done in the collection of original materials relating to California, but with Mr. Robinson's return in January, 1921, this work will be taken up again. A very valuable gift recently received, which was secured because of interest in the Borel Fund, though not being on California history, comes from Mr. I. M. Patrick of Coronado, California, and consists of two small pocket diaries of the Mexican War, and two large folio diaries of the Civil War, kept by the father of the donor, General M. R. Patrick, the Provost Marshal General of the Army of the Potomac.

The number of major students registered in the department was: autumn quarter, undergraduates 116, graduates 13; winter quarter, undergraduates 103, graduates 8; spring quarter, undergraduates 110, graduates 9; summer quarter, undergraduates 24, graduates 4.

The Master of Arts degree was conferred in June, 1920, upon: George Harold Anderson, thesis, "Imperialism Versus Benevolent Intervention in Samoa;" Margaret Elaine Bennett, thesis, "The Foreign Policy of the Democratic Party, 1893-1901;" Gladys Blanche Footman, thesis, "The Liberal Party and the Land Question in England, 1906-1914;" William Henry Handley, thesis, "Popular Education and Sectarianism in England, 1870-1906;" Edith Maples Ogden, thesis, "Foreign Lease-holds in China;" Marian Luverne Peek, thesis, "The International Policy of the British Liberal Party Since 1898;" Richard Henry Piatt, thesis, "Historical Anticipations of the Revolutionary Attitude of Ulster in 1914."

The courses noted in the accompanying table were given with the attendance as indicated:

INSTRUCTOR	COURSE Autumn Quarter	Unit Hours	Attendance
Show.....	10. European history, 395-1300.....	5	107
Trotter.....	16. English history to 1485.....	4	184
Russell.....	21. American history to 1789.....	5	106
Martin.....	36. History of Spanish America.....	5	97
Treat.....	40. Issues of the Great War.....	2	119
Rendtorff.....	57. History of Germany.....	3	22
Treat.....	66. History of Australasia.....	3	24
Show.....	76. German constitutional history.....	3	8
Martin.....	96. History of Brazil.....	3	9
Trotter.....	110. Seminar in British history.....	3	8
Russell.....	119. Seminar in American foreign relations.....	3	12
Treat.....	125. Seminar in Far Eastern history.....	3	13
Various.....	Theses.....	Various	7
Total.....			716

INSTRUCTOR	COURSE Winter Quarter	Units Hours	Attendance
Learned.....	11. European history 1300-1715.....	5	43
Trotter.....	17. English history since 1485.....	4	171
Russell.....	22. American history 1789 to 1848.....	5	101
Treat.....	27. The Far East.....	5	106
Martin.....	37. History of South America since 1823.....	5	96
Trotter.....	80. English constitutional history.....	5	69
Learned.....	107. Seminar in Modern European history.....	3	16
Russell.....	119. Seminar in American foreign relations.....	3	12
Treat.....	125. Seminar in the history of the Far East.....	3	7
Martin.....	131. Seminar in Latin American history.....	3	6
Various.....	Theses.....	Various	7
Total.....			634

INSTRUCTOR	COURSE Spring Quarter	Unit Hours	Attendance
Learned.....	12. Europe since 1715.....	5	111
Adams.....	23. American history since 1848.....	5	134
Treat.....	28. The Far East.....	5	139
Show.....	50. The Italian renaissance.....	3	6
Trotter.....	56. History of Canada.....	4	25
Russell.....	58. American diplomatic relations.....	3	9
Martin.....	70. History of Mexico and California.....	3	65
Russell.....	86. Diplomacy of the American revolution.....	3	8
Treat.....	92. Governments of the Far East.....	3	11
Show.....	100. History teachers' course.....	3	11
Learned.....	107. Seminar in Modern European history.....	3	14
Trotter.....	110. Seminar in British history.....	3	5
Adams.....	119. Seminar in American diplomatic history.....	3	13
Various.....	Theses.....	Various	2
Total.....			553

INSTRUCTOR	COURSE Summer Quarter	Unit Hours	Attendance
Show.....	10. European history 395-1300.....	5	13
Golder.....	12. European history since 1815.....	5	39
Adams.....	25. American history since 1876.....	5	91
Show.....	102. History teachers' course.....	3	10
Golder.....	107. Seminar in Modern European history.....	3	10
Adams.....	120. Seminar in American diplomatic history.....	3	13
Various.....	Theses.....	Various	5
Total.....			181
Total enrolment in four quarters.....			2,084

EPHRAIM DOUGLASS ADAMS,
Professor of History.

HOPKINS MARINE STATION

The Hopkins Marine Station, Pacific Grove, was open the entire year for investigators and special students. During the summer quarter courses were offered in Zoology, Physiology, Botany and English, as detailed below.

Investigators making use of station facilities were as follows:

The Director continued his work on the second volume of a monograph of the Sea Stars of the North Pacific and Adjacent Waters, which will require several years to complete.

During the Christmas vacation Messrs. H. C. Hampton and L. G. M. Baas-Becking, of the Department of Botany, Stanford University, investigated the occurrence and behavior of enzymes in algæ. Their problem was to determine if there occurred any catalase in algæ; if that catalase followed the same laws as the known catalases; and if there were differences in the behavior of the catalase in different groups of algæ.

Mr. W. F. Hamilton, of the Department of Zoology, University of California, during the same period, made an enquiry into mechanical factors in the coordination of the common echinoderms of the region. A special emphasis was laid on coordination in locomotion and righting.

Dr. N. L. Gardner, of the Department of Botany, University of California, worked on local algæ.

From January 7 to March 10, Dr. Frank R. Lillie, Professor of Zoology, University of Chicago, and Director of the Marine Biological Laboratory, Woods Hole, worked on problems of fertilization using the two species of common sea urchins. Dr. Lillie was assisted by Mr. J. Nelson Gowenlock, University of Manitoba, and assistant in Zoology, University of Chicago.

During the spring quarter, Dr. H. H. Newman, Professor of Zoology, University of Chicago, worked on hybridization and artificial parthenogenesis, using sea stars and sea urchins.

During the latter part of the spring quarter and the summer quarter, Dr. T. H. Morgan, Professor of Zoology, Columbia University, Dr. A. H. Sturtevant, Dr. C. B. Bridges, Miss E. M. Wallace, and Miss P. C. Reed, of the Carnegie Institution, investigated problems in genetics as illustrated by the fruit fly, *Drosophila*.

Dr. Otto Louis Mohr, Professor of Anatomy, University of Kristiania, Norway, also worked on genetics, using *Drosophila*.

Dr. Lund, of the University of Minnesota, spent a few days during the latter part of August working on the physiology of hydroids, and at the same time Dr. Frank A. Potts, University of Cambridge, England, visited the station to see the commensal annelid worms of the region.

Members of the State Fish and Game Commission have occupied quarters at the Station since November, 1919. Mr. W. F. Thompson, Research Assistant, assisted by Mr. Elton Cette and Miss Helen Edwards, has investigated the life history of the sardine and albacore. Professor F. W. Weymouth, of the Department of Physiology, Stanford University, has been working, under the auspices of the Commission, on the life history of commercial mollusks.

During the summer quarter members of the teaching staff were engaged in research, as follows:

Dr. E. G. Martin and Mr. Blake Wilbur, a student, investigated the resisting power of the brine shrimp (*Artemia*) to various media, considering especially the effects of varying the concentrations of the individual constituents of the brine in which it occurs.

Professor Edwin C. Starks finished the preparation of a zoological key to the families of the fishes of the West Coast of the United States, for publication in the California Fish and Game Commission Quarterly.

Dr. J. P. Baumberger and Dr. J. M. D. Olmsted investigated the physiology of the molting of certain grapsoid crabs. The problem was divided into two parts: (1) A biometrical study of the relation of the lineal measurements and weights of three species of crabs. (2) A physiological study of the swelling involved in molting. It was possible to recognize three stages in the molting cycle, and determinations were made of the hydrogen ion concentration, osmotic pressure, bicarbonate reserve and leucocyte count of the blood, and specific gravity and water content of the body.

Professor J. I. W. McMurphy has spent much time in becoming better acquainted with the local algæ, and has made an attempt to preserve some of the more common ones in fluid media in as nearly as possible their natural colors. As collaborator for the U. S. Department of Agriculture, a trip was made to Summerland, near Santa Barbara, to see the condition of the kelp beds. Material of decaying kelp was collected and a few bacterial cultures have been made and compared with bacteria from the kelp near the station.

Dr. Gertrude Van Wagenen started work on a monograph of the actinians and corals of Monterey Bay. This work is to be continued through the winter and spring of 1921.

The members of the teaching staff were as follows: James Percy Baumberger, Walter Kenrick Fisher, Ernest Gale Martin, James Ira Wilson McMurphy, Edith Ronald Mirrielees, James M. D. Olmsted, Edwin Chapin Starks, Gertrude Van Wagenen.

The courses and enrolment were as follows:

INSTRUCTOR	COURSE	Attendance
Fisher, Van Wagenen	General zoology.....	6
Fisher, Van Wagenen	Classification and ecology of marine invertebrates.....	9
Starks.....	Comparative anatomy of vertebrates.....	6
Starks.....	Fishes of California.....	1
Fisher.....	Zoology research.....	2
Fisher.....	Journal club.....	1
Martin, Baumberger, Olmsted.....	Elementary physiology.....	11
Martin.....	Physiology research.....	1
McMurphy.....	The Algae.....	7
McMurphy.....	Botanical survey.....	1
Mirrielees.....	English composition.....	6
Mirrielees.....	English classics.....	5
Mirrielees.....	Free reading.....	8
Total.....		64

WALTER KENRICK FISHER,
Assistant Professor of Zoology
and Director.

LATIN

After an absence of twenty-eight months Professor Fairclough returns to resume the executive headship of the department in October. The whole period of his leave was spent in the service of the American Red Cross, the last year as the Commissioner to Montenegro. The Commission was chiefly concerned with the feeding of children, the establishment of orphanages and the institution of a permanent system of sanitation and public health. Four hospitals were founded and in general a great work was accomplished for the reconstruction of the country. In recognition of his services Professor Fairclough was promoted to the rank of Lieutenant Colonel, was decorated by the King of Serbia with the Order of the White Eagle and as Commander of Saint Sava, the highest Serbian decoration given to civilians, and (under Royal decree of June 20, 1920) with the Cross of Officier de l'Ordre de la Couronne by the King of the Belgians. This last decoration was given in recognition of Professor Fairclough's work with Belgian children in Switzerland in the first year of his service.

Professor Elmore was on leave during the summer, autumn, and winter quarters, spending the time in travel, study and visits to Eastern

universities. Miss Eva May Newnan was acting instructor for the autumn, winter, and spring quarters. For the summer quarter the department had the good fortune to have the services of Professor Duane Reed Stuart of Princeton.

It is proper to refer here to Professor Foster's work on the translation of Livy's Roman History for the Loeb Classical Library, the first volume of which has recently appeared. The English version is to comprise thirteen volumes, two of which are already completed. The first volume has been received as one of the most satisfactory of the series, and begins auspiciously what an English reviewer has called a "gigantic task." Regarding the Loeb Library, it is a matter of congratulation that three of the most important classical authors—Homer, Virgil, and Livy—should be in the hands of Stanford scholars, Professor Murray's *Odyssey* and Professor Fairclough's *Virgil* having already appeared.

The summer quarter showed some increase in the number of students, and through the cooperation of Professor Stuart offered exceptional opportunity for advanced work. The students were mostly graduates. Of the latter class all were teachers and all candidates for an advanced degree. Measured by the interest our students exhibit in their work, the summer quarter for us is sufficiently justified. Speaking generally, what our department most needs is a wider interest in its work among students. Considering the great perfection of ancient literature and art and how profoundly the modern world is influenced by the ancient culture, one who has the cause of liberal education at heart cannot but regret the prevailing neglect of these interesting and fundamental subjects.

The courses given in the year with the instructors and the enrolment were as follows:

INSTRUCTOR	COURSE	Units	Attendance				
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter	
Newnan.....	1a. Cicero.....	4	4				
Foster.....	3. Terence and Cicero.....	4	7				
Foster.....	15. Lucretius.....		6				
Foster.....	22a. Seminary.....		7	3			
Newnan.....	1b. Virgil.....			2			
Foster.....	4. Catullus and Horace.....	4		8			
Newnan.....	8. Livy and Tacitus.....	4		1			
Foster.....	Thesis.....			1			
Newnan.....	25. Palaeography.....			1			
Foster.....	19. Livy.....			4			
Foster.....	4. Catullus and Horace.....			8			
Newnan.....	1c. Virgil.....				3		
Foster.....	4a. Roman Elegy.....				3		
Foster.....	6. Prose composition I.....				9		
Elmore.....	12. Latin syntax.....				5	6	
Foster.....	13. Prose composition II.....				3		
Elmore.....	17. Teachers' course.....				4		
Newnan.....	18. Seneca's tragedies.....				3		
Elmore.....	22. Seminary in Roman history.....				3		
Elmore.....	29. Roman history.....				30		
Foster.....	32. Roman literature.....				45		
Henshaw.....	1b. Ovid.....						1
Elmore.....	14. Martial.....						3
Stuart.....	22d. Roman biography.....						6
Stuart.....	33. Classical drama.....						5
Elmore.....	38. Roman contributions to modern civilization.....						4
Totals.....			24	28	108	25	

JEFFERSON ELMORE,
Associate Professor of Latin.

LAW

During the year the faculty of the Law School has consisted of Charles Andrews Huston, professor and dean; Arthur Martin Cathcart, Joseph Walter Bingham, Clarke Butler Whittier, Chester Garfield Vernier, Marion Rice Kirkwood, professors; William Brownlee Owens, acting associate professor; Henrie Granville Hill of the San Jose bar, Oscar Kennedy Cushing of the San Francisco bar, lecturers.

During the spring quarter Professor Huston was not in residence and his course for that quarter was given by Acting Associate Professor Owens. Mr. Owens taught during the summer quarter also under special appointment. Beginning with September 1, 1920, he will be a regular member of the Law Faculty with the rank of Associate Professor.

Mr. Hill has been compelled by the increasing demands of his practice to resign his lectureship in California Practice. The courses in California Practice and Procedure will be given hereafter by Mr. Owens.

The faculty for the summer quarter was composed of Professors Cathcart, Bingham, Whittier, Vernier, Kirkwood and Acting Associate Professor Owens. Professor Huston taught throughout the summer session at the Yale Law School.

The courses of instruction given during the year and the enrolment in each are given in the accompanying table:

INSTRUCTOR	COURSE	Unit Hours	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Kirkwood.....	1. Introductory.....	4			136	
Whittier.....	2. Contracts.....	5-4	119	106		
Owens.....	2a. Contracts.....	5				15
Cathcart.....	3a. Torts I.....	4		97		
Cathcart.....	3b. Torts II.....	4	80			
Vernier.....	4. Crimes.....	6			104	
Kirkwood.....	5. Property.....	4-3	68	85		
Owens.....	6. Agency.....	6			87	
Cathcart.....	10. Constitutional law I.....	3		24		
Cathcart.....	11. Constitutional law II.....	3			25	
Huston.....	12. Administrative law.....	4		8		
Huston.....	13. Municipal corporations.....	4		19		
Bingham.....	15. Private international law.....	6			27	
Kirkwood.....	16. Admiralty.....	3½				16
Kirkwood.....	21. Rights in land of another.....	3½				16
Bingham.....	22. Wills.....	4	35			
Bingham.....	23. Future interests.....	6		8		
Bingham.....	24. Water rights.....	4				32
Bingham.....	25. Mining law.....	4				20
Vernier.....	26. Persons.....	4				32
Cathcart.....	28. Public utilities.....	4			55	
Vernier.....	30. Sales.....	6	52			
Vernier.....	31. Bills and notes.....	6		56		
Huston.....	33. Private corporations.....	6	20			
Vernier.....	35. Suretyship.....	4		18		
Whittier.....	36. Mortgages.....	4				27
Kirkwood.....	37. Equity I.....	5		55		
Bingham.....	38. Trusts.....	6	21			
Kirkwood.....	39. Equity III.....	3			23	
Whittier.....	42. Common law pleading.....	4	50			
Cathcart.....	43. Code pleading.....	4	36			26
Whittier.....	44. Evidence I.....	6			75	
Whittier.....	45. Evidence II.....	3		35		
Hill.....	46. California practice I.....	2-2	31	33		
Hill.....	47. California practice II.....	2			35	
Owens.....	48. Moot court.....	2				12
Totals.....			512	544	567	196

The total registration of students in the Law School was 227, of whom 70 were graduate students, 151 were undergraduate, and 6 were special. In addition to this number there were registered in the School 18 students in the pre-legal curriculum. The total registration in the Department, including both law and pre-legal students, was 245.

The attendance during the summer quarter of 1919-20 was 65. This is an increase over the registration of 60 for the summer of 1918-19.

Outside of the regular professional curriculum the following courses were given during the year by members of the Law Faculty. Professors Huston and Vernier gave a course in Military Law. Professors Huston, Cathcart, Whittier and Vernier gave the series of lectures on Medical Jurisprudence for the students of the Stanford Medical School. The course in Business Law was not offered during the past year, but will be given by Mr. Owens in 1920-21.

The cause of thorough preparation for practice at the bar has been greatly furthered by the institution of a Board of Bar Examiners in the State of California, and the establishment by them of written examinations as tests for admission to the bar.

CHARLES ANDREWS HUSTON,
Professor of Law and
Dean of the Law School.

MATHEMATICS

The staff of the department for the year 1919-20 consisted of Robert Edgar Al'ardice, Rufus Lot Green, Hans Frederick Blichfeldt, professors; Sadie Gilmore Hackley, Anna Louise Wright, teaching assistants for the autumn and winter quarters; Heinrich Wilhelm Brinkmann, teaching assistant for the summer quarter. In addition, Professor William Albert Manning of the Department of Applied Mathematics gave two courses on advanced topics during the autumn and winter quarters.

The following courses were offered:

INSTRUCTOR	COURSE	Units	Attendance			
			Autumn Quarter	Winter Quarter	Spring Quarter	Summer Quarter
Hackley, Wright (three sections).....	1. Trigonometry.....	5	92			
Hackley.....	1. Trigonometry.....	5		33		
Brinkmann.....	1. Trigonometry.....	4				10
Wright (two secs.).....	2. Solid geometry.....	4		35		
Green.....	3. Algebra.....	5	55	19		
Brinkmann.....	3. Algebra.....	4				8
Green.....	4. Co-ordinate geometry.....	5			8	
Blichfeldt.....	4. Co-ordinate geometry.....	4				6
Green.....	5. Adv. co-ordinate geometry.....	5	11			
Allardice.....	6. Calculus.....	5		16	12	
Brinkmann.....	6. Calculus.....	4				2
Blichfeldt.....	7. General course.....	5		15	19	
Allardice.....	9. Plane geometry.....	5	14			
Allardice.....	10. Advanced calculus.....	5	12			
Blichfeldt.....	11. Differential equations.....	5		8		
Allardice.....	12. Theory of functions.....	5			7	
Blichfeldt.....	13. Vector analysis.....	4	5			
Green.....	16. Maths. of investments.....	5		9		
Green.....	17. Math. theo. of life in.....	5			4	
Allardice.....	21. Projective geometry.....	5		6		
Blichfeldt.....	21. Projective geometry.....	1				1
Blichfeldt.....	22. Non-Euclidean geometry.....	4-5			15	5
Allardice, Blichfeldt.....	23. Reading courses.....	2-3-4	3	4	6	2
Blichfeldt.....	25. Celestial mechanics.....	1-2	3			
Manning.....	Theory of groups.....	5	1			
Manning.....	Theory of algebraic nums.....	5		1		
Totals.....			196	146	71	34

The degree of Bachelor of Arts was conferred upon eight students.

HANS FREDERICK BLICHFELDT,
Professor of Mathematics.

MECHANICAL ENGINEERING

The teaching force in the department for the year 1919-20 was as follows:

William Frederick Durand, professor of mechanical engineering;
Guido Hugo Marx, professor of machine design, fall quarter only;

Everett Parker Lesley, professor of industrial engineering; Charles Norman Cross, assistant professor of experimental engineering; Lawrence Edminster Cutter, assistant professor of drawing; Horatio Stebbins, assistant professor of mechanical engineering; Edward John Stanley, instructor in pattern-making; James Bennett Liggett, instructor in foundry; Theron James Palmateer, instructor in machine shop; Robert Henry Harcourt, instructor in forge shop; Boynton Morris Green, acting instructor in machine design, winter and spring quarters; Harold Farley Elliott, acting instructor in machine design, winter quarter only.

Professor William Rankine Eckart was absent on sabbatical leave during the year, and Professor Guido Hugo Marx was similarly absent during the winter and spring quarters.

The number of students during the year showed a marked increase in numbers as compared with those for the preceding year, especially in the first year classes. This has resulted in a very considerable degree of congestion in certain of the classes, especially those in elementary freehand and machine drawing. If this condition is to continue it will evidently call for some further help in carrying on this work.

The work of the department generally, throughout the year, has gone forward smoothly and effectively.

Advantage was taken of the sale of U. S. War Department machine equipment at very low prices to obtain for our shops a number of machine tools at relatively small expense.

Advantage was also taken of the same general series of sales to obtain for the Mechanical Laboratory a Liberty airplane motor in good laboratory running condition, and which will add notably to our laboratory equipment in this direction.

During the year the Aerodynamic Laboratory has been in use for a continuation of the series of researches on air propellers for the National Advisory Committee for Aeronautics. This work is under the immediate charge of Professor E. P. Lesley, with Professor W. F. Durand acting in an advisory capacity.

During the fall and winter quarters Professor Durand was granted short leaves of absence in order to visit the leading universities and colleges of the Pacific Coast, including Idaho, Utah, Nevada and Arizona, in the interests of the National Research Council, and with the special purpose of stimulating interest in scientific research.

The attendance in the department during the summer quarter was small. Shop courses only were offered, since with our present staff it is not practicable to carry on four quarters full work, and it does not seem wise to attempt to spread the normal work of three quarters over four. Having in view the expense attached to the operation of the shops in summer and the small numbers taking advantage of the opportunities offered, it seems doubtful whether it will be economical to continue to offer shop courses in the summer quarter, at least under conditions similar to those of the summer past.

The courses given in the department during the year and the number in attendance are shown in tabular form as follows:

INSTRUCTOR	KIND OF WORK COURSE	Unit Hours	Attendance			
			Autumn	Winter	Spring	Summer
Harcourt.....	1. Lecture and shop.....	4	89	49	32	6
Liggett.....	3. Lecture and shop.....	4	56		45	6
Stanley.....	5. Lecture and shop.....	3		23	28	4
Stanley.....	6. Lecture and shop.....	4		26	14	5
Palmateer.....	7. Lecture and shop.....	3	44	16	14	
Palmateer.....	8. Lecture and shop.....	3	12	9	17	
Lesley.....	10. Lecture.....	4		4		
Cutter.....	11. Drawing.....	3	88		32	
Cutter.....	12. Drawing.....	3	42		70	1
Green.....	13. Lecture and drawing.....	4		53	46	
Marx.....	14. Lecture and drawing.....	4	14			
Elliott.....	14. Lecture and drawing.....	4		27		
Cross.....	21. Lecture and laboratory.....	3	31		21	
Cross.....	22. Lecture and laboratory.....	3	10	8		
Cross.....	23. Lecture and laboratory.....	3	20		17	
Stebbins.....	24. Lecture and laboratory.....	3	25			
Stebbins.....	25. Lecture and laboratory.....	3		3		
Lesley.....	28. Laboratory and special.....	3	2	1	3	1
Eckart.....	30. Laboratory and special.....	1		3		
Durand.....	30. Laboratory and special.....	4		2		
Lesley.....	31. Lecture and special.....	3	15	21		
Stebbins.....	32. Lecture.....	4	44			
Stebbins.....	33. Lecture.....	4		25		
Stebbins.....	34. Lecture.....	3			20	
Durand.....	35. Lecture.....	3	10			
Durand.....	35b. Lecture.....	5			19	
Durand.....	36. Lecture.....	3		27		
Durand.....	40. Lecture.....	2		26		
Durand.....	Thesis Special.....	4	1	5		
Eckart.....	Thesis Special.....	9			2	2
Totals.....			503	328	380	25

WILLIAM FREDERICK DURAND,
Professor of Mechanical Engineering.

MEDICAL SCHOOL

The registration of medical students for the year was as follows: First-year students, 27; second-year students, 27; third-year students, 28; fourth-year students, 17; fifth-year students, internes, 19; total 118. Twenty students (seventeen men and three women) were granted the degree of Doctor of Medicine during the year. Forty-one special workers were registered during the year.

The attendance in the Out-Patient Clinics was as follows: New patients, 10,878; old patients, 62,133; total number of visits, 78,118.

The Popular Medical Lectures for 1919 were delivered by: Dr. Julian Mast Wolfsohn, member of the Stanford Medical Faculty; Dr. A. A. O'Neill, member of the Stanford Medical Faculty; Dr. William Raymond

Door, Superintendent of St. Luke's Hospital; Dr. Alfred Cummings Reed, member of the Stanford Medical Faculty; Dr. Robert Eugene Bering, member of the Stanford Medical Faculty; Mr. Celestine Sullivan, Executive Secretary, League for the Conservation of Public Health.

The Jordan Medical Scholars for the year were L. R. Thompson and R. T. Haig. Those granted scholarships from the University were S. v. Christierson, J. M. George and J. Goldstein.

The Colloquia which were inaugurated by the San Francisco Polyclinic have been continued. These Colloquia are given on Thursdays and Fridays at the San Francisco Hospital by the combined visiting staff of the San Francisco Polyclinic and the Medical School and are open to graduates in medicine as well as to medical students. In addition, there are offered at the Medical School daily mid-day clinics in medicine and the medical specialties, surgery and the surgical specialties, pathology, obstetrics and gynecology, which are likewise open to the members of the profession.

The Medical School was granted in addition to the \$7200 received last year a new appropriation of \$885 for the continuance of research work in Venereal Diseases, from the United States Interdepartmental Social Hygiene Board.

Professor Alonzo E. Taylor, of the University of Pennsylvania, delivered the Lane Medical Lectures from December 8 to December 12 on "The Feeding of the Nations at War." The lectures received a very large interest among the members of the medical profession and were unusually well attended.

The amalgamation of the San Francisco Maternity and the Auxiliary to the Clinics has been completed, the new organization being known as the Stanford Clinics Auxiliary and San Francisco Maternity. The combined organization is carrying on the work that was formerly done by the two organizations separately and has been able to increase its activities to a very considerable extent. It is becoming more and more apparent what an important help the Social Service Department under the control of the Auxiliary is in carrying on the social work in the clinics and hospital. The thanks of the patients and of the Medical School are due to the ladies of the Auxiliary Board for the splendid work which they are doing.

On the first of July, 1920, the Potrero Emergency Station was abolished and the University of California and Stanford University have taken over the emergency service at the Harbor and Park Emergency Hospitals. These two hospitals are now manned by the house officers and the internes in the two universities' services at the San Francisco Hospital and the emergency work at the Mission Hospital has been coordinated with the medical services of the two universities at the San Francisco Hospital.

WILLIAM OPHÜLS,
Dean.

STANFORD HOSPITALS

During the year 1919-20 both hospitals have shown continued progress in census figures. The total number of patient days as shown by the accompanying table increased from 79,935 to 92,435. Lane Hospital increased from 51,086 to 54,324 and Stanford from 28,849 to 38,111 patient days.

	Patient Days	Patients Admitted	Average Per Day
STANFORD			
Rooms.....	20,435	1,944	56.26
Wards.....	15,819	1,114	43.33
Infants.....	1,857	335	5.11
	38,111	3,393	104.70
LANE			
Private.....	14,741	1,512	40.38
Clinic:			
Medical.....	12,302	5,108	108.44
Surgical.....	11,207		
Gynecological.....	4,167		
Obstetrics.....	4,112		
Infants.....	3,720		
Children (Pr. and Cl.) ..	4,075		
	54,324	6,620	148.82
Totals.....	92,435	10,013	253.52

GENERAL STATISTICS

The following figures are of general statistical interest:

Resident staff	3
Senior internes	5
Junior internes	6
Daily average number of employees	200
Daily average number of pupil nurses	130
Daily average number of instructing nurses	18.3
Greatest number of patients.....	304
Smallest number of patients.....	202
Number of private operations	2,465
Number of clinic operations	1,445
Number of X-Ray plates—clinic	5,631
Number of X-Ray plates—private	5,818
Number of electrotherapy treatments	2,243
Number of hydrotherapy treatments	2,083
Number of electrocardiograph examinations	327

ALTERATIONS AND IMPROVEMENTS

In Lane Hospital the elimination of the old hydraulic elevators permitted considerable enlargement of the store room. In addition the office arrangements of the store room have been remodeled so as to provide for better handling of the clerical part of the work.

In Stanford University Hospital no important changes have been made except perhaps the work at present under way of enclosing the

private room balconies with glass frames. The object is both to protect the balconies from wind and to make the rooms more attractive. The glass frame increases the available room space by permitting the balcony to be used as a part of the room.

The Electrotherapy Department has been moved from the Hydrotherapeutic Department to rooms originally designed for it. The work necessary to carry out this move consisted chiefly of the erection of one or two partitions and the installation of a small amount of plumbing. The object of the change was to provide more room for the one department and better accommodations for the other.

The roof garden for which plans were drawn last year has not yet materialized.

HYDROTHERAPY

This department has been very successful in the amount of work performed and in financial returns. Under the care of M. J. Desiré the work has steadily grown so that the Clinical Committee felt that the time had arrived for carrying out the original plan of eventually placing the department in the charge of a full time member of the Medical Faculty. By resolution of the Clinical Committee, Dr. Harry Leslie Langnecker of the Orthopædic Clinic was appointed Director of the Department of Physical Therapy to take effect May 1, 1920.

STAFF

During the past year Dr. H. G. Mehrtens served as Resident Physician, Dr. R. L. Draper as first assistant House Physician, and Dr. Rea E. Ashley as second assistant.

INTERNES

The Senior Internes for the year were John F. Chapman and Herman Schussler, Jr., in Medicine and Pediatrics, Albert V. Pettit in Obstetrics and Gynecology, William H. Moore in Surgery, and Dorothy A. Wood in Actinography.

The Junior Internes were D. G. Davy, C. A. DeLancey, H. von Geldern, J. M. Graves, Y. Kusama, R. V. Lee, J. C. Parrott, L. R. Reynolds, J. M. Tufts.

For the coming year the Clinical Committee has provided for three new positions: Resident in Pediatrics, Senior Interne in Eye, Ear, Nose and Throat work and the position of resident in Gynecology and Obstetrics.

RADIUM

Under charge of Dr. Monica Donovan the income from the Fitzhugh Radium fund has not only met all expenses connected therewith but has enabled the Hospital to purchase an additional 25 mgm.

DIET DEPARTMENT

Miss Lottie B. Sloan continues in full charge of this department with Miss Calderwood as first assistant dietitian, Miss Dorothy Nesman as

second assistant dietitian and A. Bolger as chef. The quota of pupil nurses acting as assistants is eight and the number of regular employees is forty-seven.

The number of kitchens under supervision of the dietitian is as follows:

General kitchen	1
Diet kitchen	1
Special diet kitchen.....	1
Nourishment kitchen	1
Service kitchens, Stanford	7
Service kitchens, Lane	9
Baby Formula kitchen.....	1

The innovations during the past year were the addition of the special diet kitchen and the establishment of a cafeteria for the nurses and clerks' dining room.

The special diet kitchen established in separate quarters has been largely devoted to the preparation of food for diabetic patients but also cares for any special prescriptions called for in the line of invalid diet.

The cafeteria service was installed with very little expense. The idea was to save food, improve service and eliminate the ever troublesome and unreliable waiter. The change has brought the desired results and the pupil nurses are much pleased with the new arrangement.

STORE ROOM

This department continues in charge of Mr. E. L. Slack, with Miss Henrietta Suter as requisition clerk. Reorganization as noted below has added two new positions, stenographer, held by Miss N. Britton, and a receiving clerk. Two delivery clerks complete the staff.

The Comptroller of the University during the past year made certain changes in the purchasing department of the utmost importance to the hospital. Arrangements were made by which all supplies except those obtained on contracts are handled by the hospital. To this end the storekeeper, Mr. E. L. Slack, was appointed Local Purchasing Agent. He serves the Medical Department as well as the two hospitals.

The object of the change was to improve the speed and directness of obtaining supplies. The results have been most satisfactory.

CENTRAL NURSES' SUPPLY ROOM

This department more fully described in last year's report, in charge of Miss Clara DeForest, with Miss Watrous as assistant, continues to be the strongest economic factor in the hospital. It covers the storing, distribution, and supervision of nurses' supplies and is able to introduce and check up system and order in methods of handling them. All splints, for instance, have recently been placed in charge of the supply room and are now kept properly equipped and accessible. The department has also recently taken up the making of belts with the assistance of Dr. Langnecker. The care, recording and distribution of opiates is also a part of its functions.

SCHOOL OF NURSING

The hospital administration learned with much satisfaction that arrangements had been perfected by the Board of Trustees for building a new nurses' home. The plans as shown call for one of the finest and most complete buildings of the kind to be found anywhere. With accommodations for two hundred nurses, with individual rooms and lavatories for each nurse, with assembly rooms, lecture rooms, laboratories, gymnasium, infirmary and library, the building will leave nothing to be desired

BUSINESS OFFICE

During the year the system of bookkeeping was completely revised and brought up to date by a firm of expert accountants. The chief results are that accounts and bills are kept up to date by daily entries so that bills are always ready for presentation.

The record for collections for the year ending August 31, 1920, was even better than the previous year, showing a loss through uncollectable accounts of but six-tenths of one per cent.

BUSINESS ADMINISTRATION

Accountant	MR. W. L. COTTE
Cashier (day).....	MISS ANNA J. LEIK
Cashier (night).....	MR. H. E. GRIFFIN
Bookkeepers	MISS EDYTHE LUTLEY
	MR. E. ERIKSEN
	MISS O. FOUTS
Mail clerk.....	MRS. M. WILLATS
Telephone operators.....	MISS K. FORAN
	MISS R. LARSON
	MISS M. HUGHES
Secretary to Physician Superintendent.....	MRS. M. J. DESIRÉ
Receiving nurse	MISS CLAIRE KENT
Registration nurse.....	MISS G. L. BRAMEILA
Information nurse (Lane).....	MISS A. CULIN
Information nurse (Stanford).....	MISS V. GRIFFITHS
Information assistant, Stanford (night).....	MRS. A. FRIEDEL
Information assistant, Stanford	MRS. A. GRIMMER
Information assistant, Stanford	MRS. B. BRUSSTAR
Purchasing agent.....	E. L. SLACK
Assistant storekeeper.....	MISS H. SUTER
Stenographer and file clerk.....	MISS N. BRITTON

GEORGE BURBANK SOMERS,
Physician Superintendent.

MEDICINE

The teaching and clinical staff of the division for 1919-20 consisted of: Albion Walter Hewlett (executive), professor; William Fitch Cheney, Harold Phillips Hill, Andrew William Hoisholt, clinical professors;

Thomas Addis, Walter Whitney Boardman, Ernest Charles Dickson, Harold Kniest Faber, associate professors; Harry Everett Alderson, Charles Miner Cooper, Walter Frank Schaller, associate clinical professors; Herbert Yerington, assistant professor; George De Forest Barnett, William Redwood Price Clark, Millicent Mary Cosgrave, Thomas George Inman, Henry George Mehrtens, Harry Reeves Oliver, Alfred Cummings Reed, Roland Beatty Tupper, Julian Mast Wolfsohn, assistant clinical professors; Monica Donovan, instructor; Maude Noble Haven, William Kenney, Edward V. Knapp, Mary H. Layman, Peter Harrison Luttrell, Arthur Aloysius O'Neil, Philip Hale Pierson, Jay Marion Read, Natalie Selling, Chester Durbin Sewall, clinical instructors; Clement H. Arnold, W. Edward Glaeser, Norbert J. Gottbrath, Charles Nelson Leach, Walter Edward Smith, Harry Spiro, assistants; Arthur John Ritter, lecturer on Mental Deficiency; M. J. Desiré, Lecturer on Physical Therapeutics; Robert Eugene Bering, Lecturer on Drug Addictions; Guy Stevens Farrington, Lecturer on Speech Defects; Morton Raymond Gibbons, Lecturer on Medical Aspects of Insurance.

Instruction was given in the medical wards of the Lane and San Francisco Hospitals, in the children's ward of Lane Hospital, in the tuberculosis wards at the San Francisco Hospital, in the Isolation Hospital, in the various out-patient clinics, and in the X-ray department of Lane Hospital.

Instruction in the medical wards of Lane Hospital was given by Doctors Hewlett, Cheney, Addis, Dickson, and Boardman in Medicine, by Doctors Schaller, Inman, and Mehrtens in Neurology, by Dr. Hoisholt in Psychiatry, and by Dr. Alderson in Skin Diseases and Syphilis.

The Medical Service at the San Francisco Hospital was in charge of Dr. H. P. Hill, assisted by Doctors Kenney, Luttrell, and Tupper. The Tuberculosis Service at the San Francisco Hospital was in charge of Dr. W. R. P. Clark, assisted by Dr. W. E. Glaeser.

The number of admissions during the year to the Medical Clinic Ward at Lane Hospital was 1858.

The following table gives the number of patients who have been treated in the Out-patient Clinics attached to the Medical Division:

OUT-PATIENT CLINIC 1919-20	New Patients	Old Patients	Refers and Transfers	Total Visits
Medical.....	1,570	8,962	236	10,756
Children's.....	1,820	5,747	967	7,935
Skin.....	484	7,652	846	8,986
Neurological.....	513	5,718	331	6,606
Mental.....	77	23	1	101
Chest.....	202	1,304	219	1,725
Dental.....	800	568		1,368

Investigation, which had been greatly disorganized by the war and by the epidemic of influenza, has, especially during the last six months, begun to recover.

Dr. Hewlett has made a number of observations on the rate of assimilation of large quantities of dextrose administered by mouth in successive doses at short intervals of time, as measured by changes in the level of the concentration of sugar in the blood and by the amount of sugar excreted in the urine. Observations on normal individuals and on patients with mild diabetes and diseases of the liver are still being carried out.

Dr. Nagayama completed experiments on the effect of changes in the acid-base equilibrium of the body on the urea excreting function of the kidney. He showed that in rabbits a decrease in the CO_2 combining power of the plasma induced by the administration of acid phosphate led to a marked decrease in the capacity of the kidney to excrete large amounts of urea. These experiments were controlled by others in which an equivalent amount of neutral phosphate was given. In addition work was carried out which showed that the simultaneous administration of phosphate and urea led to a greater rate of excretion than when urea alone was given, an observation of importance in connection with the problem of the mechanism of the elimination of these substances by the kidney. These results have been published in recent numbers of the American Journal of Physiology.

Dr. C. K. Watanabe is studying various phases of experimental tetany induced by guanidine. At present he is determining the effect on the fat content of the plasma in rabbits.

Mr. Shevsky completed studies on the distribution of the reducing substances in the blood between plasma and corpuscles.

Mr. Azevedo, Mr. Sampson, Mr. Coll and Mr. Goldstein, medical students, have been collaborating with Dr. Addis in an investigation into the factors which influence the rate of excretion of phenolsulphonephthalein. Measurements are being made on rabbits, normal individuals and patients under varying conditions.

Dr. Addis and Mr. Drury are continuing work in the direction of establishing a normal standard for the rate of urea excretion when the blood urea concentration has been increased by the administration of urea. A provisional standard has already been obtained and attempts are being made to determine the quantitative effects of variations in body weight, food, emotion, etc., and the influence of adrenalin and of pituitrin.

Dr. Addis and Mr. Drury are engaged on an investigation into the effects of various methods of treatment in nephritis, using the rate of urea excretion at high levels of blood urea concentration, changes in various renal elements in urinary sediments and blood pressure observations as a basis for measurement. These methods are also being employed in the early diagnosis of Bright's Disease. The Division is indebted to Mr. Wellington Gregg and a number of his friends, who have donated \$1100, to be used in the further prosecution of this work.

Dr. Kroll is studying the effect of variations in the intake of sodium chloride and water on the blood pressure in cases of hypertension, using a standard derived from a large number of observations on normal men under similar conditions.

During the year Dr. Dickson was asked by the National Canners' Association to collaborate with Dr. Karl Meyer of the George William Hooper Foundation for Medical Research in a study of botulism in California, and at the joint request of the Presidents of Stanford University and the University of California Major J. C. Geiger of the U. S. Public Health Service was detailed to assist them in the epidemiological aspects of the problem. The work has been guaranteed.

In the laboratory of experimental medicine Mr. Richard Shevsky has undertaken a study of the pharmacology of the botulism toxin and has been working under the direct supervision of Professor Martin of the Department of Physiology. Miss Harriet King and Miss Anna Franklin are studying the thermal death point of spores of *bacillus botulinus* and Miss Ruth Garland is investigating the immunological characteristics. The results of these investigations have not yet been reported. Two papers, one on a study of the antitoxin of *bacillus botulinus* by Dr. Dickson and Miss Hewitt, and one by Dr. Dickson on botulism have been published during the past year.

In the subdivision of Pediatrics, Dr. Faber has been studying the range of normal blood pressure in children between the ages of three and sixteen years; the relation of sitting and height with body weight, stature, surface area, and state of nutrition in a series of 1100 children; certain phases of intestinal disturbances in childhood and infancy (laboratory); food requirements of new born children as measured by spontaneous intake. Papers by Dr. Faber on sodium citrate and scurvy, and on the antiscorbutic action of honey have appeared during the past year in the *Proc. Soc. Exp. Biol. and Med.* and in the *Jour. of Biol. Chem.* Papers on the growth of infants in San Francisco, on subcutaneous emphysema in an infant, on von Pirquet's feeding system on a new weight chart for infants have been published in the *Arch. of Pediat.*, the *Amer. Jour. Dis. Child* and in the *Calif. State Jour. Med.* during the past year.

Dr. Yerington is investigating the results of treatment over a period of several years of a series of children with congenital syphilis. Dr. Cosgrave with Dr. von Geldern is studying the results of treatment with pertussis vaccine of a series of children with whooping cough. Dr. Layman is making a study of certain blood changes in children with eczema. Mr. Flood is studying the rate of absorption of various sugars as judged by the rate of increase in reducing substances in the blood.

Dr. Pierson has been engaged in perfecting an apparatus for the manufacture, preservation and administration of measured amounts of sulphur dioxide to rabbits infected with tuberculosis, and has also studied the effect of sodium morrhuate given intravenously on tuberculous lesions in rabbits. In addition Dr. Pierson has been making observations on the rate of acid formation in broth by various acid-fast organisms.

Dr. Schaller has continued his work on central nervous lesions, especially those of the spinal cord. He also published a paper on "Delayed ulnar palsy following elbow injury" in the *California State Medical Journal*.

Dr. Mehrtens has continued his experiments on the permeability of the meninges to arsphenamine. His work is supported by a grant from the U. S. Interdepartmental Social Hygiene Board. The possibility of causing arsphenamine to pass from the rectum into the spinal fluid has been investigated. A comparison has been made between the concentration of the drug in the blood and urine after this method of administration and the concentrations found after intravenous injection. The indications for rectal therapy have been worked out and the clinical results are now being tabulated. Various papers by Dr. Mehrtens in connection with this subject have appeared during the past year in the Arch. of Neur. and Psych., the Proc. Soc. Exper. Biol. and Med. and the Calif. State Jour. of Med.

Dr. Alderson, Dr. Pruett and Mrs. Shepardson are investigating methods for the treatment of syphilis and their work has been supported by a grant from the U. S. Interdepartmental Social Hygiene Board.

Dr. Boardman is engaged in studying various points in connection with diseases of the stomach and intestines by means of fractional test meals.

Dr. Donovan has continued work on the effect of radium and X-rays, especially in the treatment of new growths and the granulomata.

Various other lines of investigation are being planned by these and other members of the Division for the ensuing year.

The following theses were completed during the year 1919-20:

Report of a case of aplastic anæmia, with special reference to the control of hemorrhage from the gums, by Orrie E. Ghrist.

The absorption of phenolsulphonephthalein from the subarachnoid space in tumors of the spinal cord, by Arthur James Hood.

Results in the treatment of tapeworm, by Carol Edna Jameson.

Effect of epinephrin injections of oophorectomized women as compared with normal women, by W. Park Richardson.

A resume of children's year, by Myrnie Ada Gifford.

Blood pressure in children, by Charles A. James.

The effect upon the blood picture of normal guinea pigs of inoculation with blood and mouth washings from measles patients, by Mrs. Louise Taber.

The following theses were started before September, 1920, but not yet completed:

Blood sugar, by Leland Wadsworth Ellis.

Actinomycotic pyemia in man; by Walter Ferris Pritchard.

The rate of excretion of phenolsulphonephthalein in normal adults and the effects thereon of variations in the volume of urine, and the effect of urea administration, by J. A. Sampson. Mr. Sampson is also working upon the effect of changes in urine volume in rabbits.

The rate of excretion of phenolsulphonephthalein in rabbits, the effect of adrenalin and of urea thereon, by Mr. J. A. Azevedo.

The effect of pituitrin on the rate of excretion of phenolsulphonephthalein in rabbits, by Mr. D. Coll.

The effect of pituitrin on the rate of excretion of phenolsulphonephthalein in rabbits, by Mr. B. A. Myers.

The effect of various diets and drugs on the capacity for excretion of urea of normal adults and of patients with Bright's Disease, by Mr. H. Miller.

The effect on the coagulation time of oxalated human plasma of various tissue extracts, and the effect of such extracts on the time of bleeding from wounds, by Mr. Kolos.

Neurasthenic states and their dependence upon pathological processes, by Miss H. E. Twombly.

Muscular strength in diseases of the central nervous system as tested by the Martin muscle test, by Lucile Williamson.

Quantitative estimation in blood and urine following rectal administration of arsphenamine, by Earl Newton.

Provocative Wassermann, by Mrs. Ruth T. Shephardson.

Investigating all syphilitic patients particularly patients with regard to the Wassermann fast cases, by Mr. Harry Coe.

Treatment of dermatitis venenata by the injection of an extract of the poison oak plant, by Mr. W. Crane.

Infant blood sugar curves and their analysis, by Mr. Randolph Flood.

The following courses were given:

INSTRUCTOR	COURSE	Units	Attendance				
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter	
Reed.....	1. Physical diagnosis.....	7½	17		16		
Addis.....	2. Clinical pathology.....	4	17		19		
Dickson.....	3. Diseases of the thoracic organs.....	4	12	15			
Boardman.....	4. Diseases of the digestive tract.....	4		9		19	
Boardman.....	5. Infectious diseases.....	3½			15		
Addis.....	6. Disease of the kidneys.....	3	13			19	
Reed, Arnold.....	7. History taking.....	3		3	10	11	
Reed.....	8. Tropical diseases.....	2			25		
Arnold.....	9. Diseases of the endocrine glands.....	1			20		
Hewlett.....	10. Experimental medicine.....	2	12		16		
Langnecker.....	11. Physical therapeutics.....	2			9		
Addis.....	12. Dietetics.....	2			22		
Hewlett.....	13. Practical therapeutics and prescrip- tion writing.....	4		28			
Donovan.....	14. Roentgenography.....	2		28			
Cowan, Cosgrave.....	17. Pediatrics: Recitation.....	2	13	29	15		
Yerington, Faber.....	18. Infant feeding, and formula prepar- ation.....	2	5	8	8	5	
O'Neill.....	19. Communicable diseases.....	2	7	8	8	6	
O'Neill, Faber, Ritter.....	20. Lectures on pediatrics.....	1	13		23	17	
Inman.....	21. Neurology.....	2		27	27		
Hewlett.....	22. Set clinic in medicine.....	1	8	15	13	5	
Faber, Alderson, Schaller.....	23. Set clinic in medical specialties.....	1	6	8	12	6	
Hewlett.....	24. Ward work—Lane Hospital.....	7	6	7	3	1	
Dickson, Hill.....	25. Ward work and clinics—S. F. Hosp.....	7	8	4	4		
Reed.....	26. Out-patient work in internal med.....	2		2			
Pierson.....	27. Out-patient work in tuberculosis.....	2	2	3	2		
Clark.....	28. Tuberculosis clinic—S. F. Hospital.....	1	8	4	3		
Wolfsohn.....	29. Neurology clinic—S. F. Hospital.....	2	8	4	4		
Mehrtens.....	30. Out-patient work in neurology.....	2			1	2	
Alderson.....	31. Cutaneous medicine.....	2	5	9		4	
Faber, Alderson.....	32. Out-patient and ward work in pediatrics and cutaneous med.....	6	2	5	8	4	
Donovan.....	33. Roentgenography.....	1	8	2		2	
Hoisholt.....	34. Psychiatry.....	1½	16	16	14		
Ophuls, Schaupp, Cowan, Hewlett.....	35. History of medicine.....	1		17			
Huston.....	36. Jurisprudence.....	1		12			
Dickson.....	37. Military medicine.....	1		19			
Gibbons.....	38. Industrial accident insurance.....	1			14		
Totals.....			186	282	311	101	

ALBION WALTER HEWLETT,
Professor of Medicine.

OBSTETRICS AND GYNECOLOGY

The teaching during the past year has been done by Alfred Baker Spalding, professor; Henry Walter Gibbons, Frank Robert Girard, Henry Augustus Stephenson, assistant clinical professors; Ludwig Augustus Emge, instructor; Karl Ludwig Schaupp and Chester Biven Moore, clinical instructors; William E. Stevens, lecturer. Drs. Harry E. Clay, Lewis Michelson, Arthur L. Munger and Clarence O. Sappington have assisted in the Women's Clinic.

It is a great satisfaction to see the increase in the number of special workers in the Women's Clinic, as we cherish the idea of gradually building up a graduate teaching division. Drs. C. A. Ainslie, E. M. Aldana, R. C. Carter, J. A. Duncan, P. N. Jacobson, O. S. Kucich, D. C. Long, A. M. Massie, P. F. McMurdo and L. O. W. Moore have assisted in the Women's Clinic as special workers.

Four student theses were completed as follows: "Relation of blood pressure to pregnancy" by M. L. Azevedo; "Relation of the position of the uterus to the pelvic inclination as judged by the lumbar index" by G. H. Becker; "Adeno myomata including one showing a deciduous reaction of pregnancy" by G. W. Nagel; and "Experimental transplantation of the ovary in the body cavity of the uterus" by D. E. Shepardson. This work was done under the personal supervision of Drs. Spalding and Emge. Contributions on "Cystic teratoma of the ovary with carcinoma" and a "Study on frozen sections of the pelvis with description of an operation for pelvic prolapse," by Dr. Spalding, were published. Dr. Emge's paper on "Pregnancy after uterine suspension" also has appeared. The latter has also completed a study on mitochondrial granules in the kidney and a similar one on such granules in the human amnion. These papers and that of Dr. C. B. Moore on "Infections of the female urethra" are in print. Some difficulty has been had in finding publishers for morphological papers. Clinical papers by Drs. Spalding and Emge, presented before the meeting of the California State Medical Society, will appear in print presently.

Monthly conferences have been held by the staff. These meetings, in which clinical and divisional matters were discussed, have furnished the necessary stimulus for closer departmental interests. They have also established a firmer relationship between the staff of the San Francisco Hospital and the staff of the Women's Clinic.

The wards at Lane Hospital have been under the direct supervision of Dr. Spalding for the greater part of the year and of Dr. Emge for the summer quarter. For the past few months the Nursery Ward has been directly supervised by the Subdivision of Pediatrics. At the San Francisco Hospital the Gynecological Ward has been under the supervision of Drs. H. W. Gibbons and F. R. Girard and the Obstetrical Ward under the supervision of Dr. K. L. Schaupp with the assistance of Dr. A. L. Munger.

The appointment of a Resident in Obstetrics and Gynecology has been a step forward in the training of our students. This residency furnishes training for a third year, and affords opportunity for independent and more mature work.

The "Out-Patient Obstetrics" has been re-established since July 1, 1920, and there are already signs of a rapid development in this branch of our department.

Animal experimentation was limited to a study by Dr. Emge and Mr. Jensen on the effect of benzyl-benzoate on rabbits and that of Mr. Shepardson on ovarian transplantation performed on cats.

In the Women's Clinic, 6532 patients have been treated. Nine patients have been confined in their homes by students. In the Gynecological Ward at Lane Hospital 350 patients have been treated and in the Obstetrical Ward 358 patients have been taken care of. Two hundred fifty-nine patients have been cared for in the Gynecological Ward at San Francisco Hospital and 178 in the Obstetrical Ward. In the laboratory for the Division of Obstetrics and Gynecology 790 specimens have been studied.

The following table shows the courses given in the division during the year and the attendance of students:

INSTRUCTOR	COURSE	Unit	Attendance			
			First Quarter	Second Quarter	Third Quarter*	Fourth Quarter
Emge, Stephenson..	1. Laboratory.....	3	9		16	
Spalding, Emge, Stephenson.....	2. Obstetrics lectures.....	3	9		16	16
Spalding.....	3. Obstetrics lectures.....	3		28		
Spalding.....	4. Obstetrical lectures.....	2			27	
Emge, Stephenson..	5. Ward rounds—Obstetrics.....	1	5	8		
Schaupp.....	6. Manikin exercises.....	1	11	1		12
Moore, Gibbons, Girard, Clay.....	7. Women's clinic.....	2	4	7	4	3
Stevens, Michelson	8. Cystoscopy.....	1	1			1
Moore.....	9. Out-patient obstetrics.....	2 wks. 56 hrs.			3	5
Spalding, Emge.....	11. Operating room—Stanford.....	1	12	13	6	4
Gibbons, Girard.....	12. Operating room—S. F. H.....	1	8	4		
Spalding, Emge.....	13. Gynecology lectures.....	1	16	13	6	
Schaupp.....	14. Obstetrics—S. F. H.....	1	2			
Spalding, Emge.....	15. Set clinics.....	1	21	36	32	24
Stephenson, Sappington.....	16. Special workers.....		2	2	3	5
Totals.....			100	112	113	70

ALFRED BAKER SPALDING,
Professor of Obstetrics and Gynecology.

PATHOLOGY

The personnel of this division was made up of William Ophüls, professor; Jean Redman Oliver, associate professor; Miss E. M. Douglass and Ben Wilson, technical assistants.

Dr. Ophüls finished his work on arteriosclerosis.

During the last year Dr. Jean Oliver has published a study of the early changes following the injection of tubercle bacilli into the bone marrow of animals, also a study on the experimental production of specific antisera for infections of unknown cause with particular reference to nephrotoxins. A microchemical investigation on the mechanism of urea excretion was also completed by him, and considerable work done on the pathology of bronchial asthma.

Mr. Yamada commenced his thesis on Toxic jaundice following intensive arsphenamine treatment, and Mr. Christerson on the Regeneration of mitochondria in the kidney.

The following report shows the courses in the division and the attendance of students:

INSTRUCTOR	COURSE	Unit	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Ophuls, Oliver.....	1. General pathology (b).....	6	18		17	
Oliver.....	2. General pathology (optional).....	1				
Ophuls, Oliver.....	3. Special pathology.....	4	13	27	25	19
Ophuls, Oliver.....	4. General pathology (a).....	8				6
Totals.....			31	27	42	25

The number of autopsies this year was 155. Towards the end of the year the autopsy service was considerably interfered with by an opposition on the part of a group of undertakers who resorted to every means in an attempt to curtail the work.

The number of pathological and bacteriological specimens examined in the laboratory amount to 737.

WILLIAM OPHÜLS,
Professor of Pathology.

PHARMACOLOGY

During the present year the teaching was done by Dr. Albert C. Crawford.

The research work on the pressor compound of the pituitary gland was brought to a preliminary conclusion. Dr. Crawford wrote an article on the chemistry of the suprarenal gland.

Some preliminary observations were also made on the effects of testicular extract.

The following table shows the courses offered:

INSTRUCTOR	COURSE	Hours Per Week	Attendance		
			Autumn Quarter	Winter Quarter	Spring Quarter
Crawford, A. C.....	1a. Pharmacology and materia medica.....	9	16	.....	15
Crawford, A. C.....	1b. Pharmacology and materia medica.....	5	.....	27	.....

ALBERT CORNELIUS CRAWFORD,
Professor of Pharmacology.

SURGERY

The teaching and clinical staff of the division for the year 1919-20 was as follows: Stanley Stillman, Emmet Rixford, professors; Rufus Lee Rigdon, Albert Brown McKee, Edward Cecil Sewall, clinical professors; Leonard Wheeler Ely, Frank Ellsworth Blaisdell and John Francis Cowan, associate professors; Leo Eloesser, associate clinical professor; Hans Barkan, Philip Kingsworth Gilman, Harrington Bidwell Graham, Harry Leslie Langnecker, Harvard Young McNaught, John A. Bacher and Melville E. Rumwell, assistant clinical professors; Edward Bancroft Towne, instructor; H. Alexander Brown, James Root Dillon, Ross Wallace Harbaugh, Lester O. Kimberlin, Roderic O'Connor, Caroline B. Palmer, Otis Allen Sharp, Chester Howard Woolsey, clinical instructors; John Robert Burrows, Hubert W. Dudley, Josiah H. Kirk, Harold Stack Moore, H. O. von der Lieth, John P. Strickler, F. L. Wright, J. D. Reeng, assistants; George W. Hartman (Genito-Urinary Surgery), Henry A. L. Ryfkogel, Burt S. Stevens (Surgery), Cullen F. Welty (Otology, Rhinology and Laryngology), lecturers; and Nicholas Jacobs (Surgery), assistant lecturer.

Instruction in general surgery at Lane Hospital has been given by Drs. Stillman, Gilman, Blaisdell, Cowan, Towne and Kimberlin, and in the Out-patient clinic by Dr. Rumwell.

Instruction in general surgery at the San Francisco Hospital has been given by Drs. Rixford, Eloesser and Harbaugh.

The Public Surgical Clinic given by members of the Surgical Staff has been conducted at the Medical School each Thursday morning from 11:30 to 12:30. The work of this clinic consists of demonstrations and discussions of surgical cases and operations.

The Out-patient Surgical Clinic has been under the supervision of Dr. M. E. Rumwell, assisted by Drs. E. B. Towne, H. O. von der Lieth, John P. Strickler, and Miss Linda F. Bugeia, clerk of clinic.

The total number of visits to this clinic was 5739, of which 1403 were made by new patients (including refers and transfers), and 4336 by old

patients. One hundred sixty-two patients were transferred to Lane Hospital and 42 to the surgical service at the San Francisco Hospital.

During the year, 359 clinic operations have been performed by members of the Division of General Surgery in the operating rooms of Stanford Hospital.

Dr. Emmet Rixford published a paper on the surgical importance of the failure of primary rotation of the intestines.

In the Genito-Urinary Subdivision, the teaching and clinical work have been under the supervision of Dr. R. L. Rigdon, chief of clinic, and Dr. J. R. Dillon, assisted by Drs. F. L. Wright, J. D. Reeng and C. H. Woolsey, Mr. B. F. Jones, technical assistant, and Mrs. W. F. Pritchard, clerical assistant.

The total number of visits to the clinic during the year was 10,189. Of these 9196 were by old patients, 993 by new patients (including refers and transfers). One hundred thirty patients were transferred to Lane Hospital and 36 to the San Francisco Hospital. One hundred forty-six cystoscopic and 74 endoscopic examinations were made in the clinic.

At the San Francisco Hospital, the Genito-Urinary Service has been in charge of Drs. J. R. Dillon and G. W. Hartman. During the year 41 operations were performed and 40 cystoscopic examinations made.

In ophthalmology, the clinic has been under the supervision of Dr. A. B. McKee, assisted by Drs. O. A. Sharpe, H. A. Brown and H. W. Dudley, with Mr. J. H. Brunings, optician.

Instruction in the clinic has been given by Drs. McKee and Sharpe.

The total number of visits of old patients was 4673, the number of visits of new patients was 1179; of referred patients 419. Sixty-one patients were sent to the clinic ward of Lane Hospital for treatment and 41 operations were performed.

Dr. Roderic O'Connor has had charge of the work in Ophthalmology at the San Francisco Hospital.

Contributions to clinical ophthalmology were made by Dr. Roderic O'Connor and Dr. Hans Barkan.

In Otology, Rhinology and Laryngology, the clinic and instruction have been under the supervision of Dr. E. C. Sewall, chief of clinic, assisted by Drs. John A. Bacher, H. G. McNaught, Josiah H. Kirk, Harold S. Moore, Merton J. Price and Miss Elsie Cook, clerk of clinic.

The total number of visits to the clinic during the year was 9444, of which 6571 were made by old patients, 1124 by new patients, and 1749 by referred and transferred patients. Eight hundred fifty operations were performed in the clinic and 600 operations were performed in the hospital.

During six months from January to June, 1920, inclusive, there were 91 cases scheduled for operations under local anæsthesia in the clinic, which had to be postponed on account of the lack of beds in the hospital wards.

Various papers on clinical subjects were published by Dr. E. C. Sewall, Dr. J. A. Bacher and Dr. H. Y. McNaught.

The clinic and instruction in Orthopædic Surgery have been under the supervision of Dr. Leonard W. Ely, assisted by Dr. H. L. Langnecker.

Miss Helen C. Wallach has been clerical assistant and technical assistant in the laboratory. Her work in the laboratory has facilitated scientific work of the subdivision. The total number of visits to the clinic was 2907, of which 2114 were made by old patients. Dr. Langnecker has been appointed head of the department of Physical Therapy but still maintains his connection with the clinic. The classes in postural correction are now conducted at the hospital. Dr. Arthur L. Fisher, after an absence of four years, has returned to the clinic.

The laboratory of Surgical Pathology has been conducted by Dr. F. E. Blaisdell with Mr. Walter Edlund, technical assistant.

During the year 351 specimens of tissue from the operating rooms of the hospital and college clinics have been examined.

Dr. Ely has continued his studies on bone formation and the great second type of arthritis, and has published several papers in *The Annals of Surgery* on experimental work in reference to the pathology of the bone and joint lesions.

Dr. Blaisdell has continued his studies on the structure of the parametrium at different ages and the study of a pathological embryo of 3mm. in length.

Drs. Blaisdell and Cowan have continued their study of the healing of green-stick fractures.

Dr. Cowan has completed his experimental study of fractures of the patella.

Dr. E. B. Towne has been doing experimental and clinical work on surgical problems connected with the central nervous system and has published a paper on "Finger exploration of gunshot wounds of the brain."

Dr. Dillon of the Subdivision of Genito-Urinary Surgery published a paper in conjunction with Dr. Blaisdell on the "Surgical pathology of the seminal vesicles."

The following thesis was started but is not yet completed: A perineal traumatic injury to articular cartilage by John Graves; Bone graft by J. Walter Jones.

The following thesis was started but is not yet completed: A perineal suprapubic extraurethral prostatectomy (devised by Dr. Rigdon) by Leonard Woods.

The accompanying table shows the courses given for the year:

INSTRUCTOR	COURSE	Unit	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Cowan, Gilman.....	1. Principles of surgery.....	4½	17		15	
Blaisdell.....	2. Fractures and dislocations..	2	17		16	
Blaisdell.....	3. Surgical anatomy.....	1½	17		15	
Towne.....	4. Surgical diseases of the extremities.....	2	17		16	
Stillman, Cowan.....	5. Surgical diseases of the abdomen.....	2	13		16	
Rixford.....	6. Surgical diseases of the head and neck.....	2		26		
Towne.....	7. Surgical diseases of the thorax.....	1			29	
Stillman, Cowan, Gilman.....	8. Surgical clinic: Set clinic.....	4	13	25	18	13
Rumwell.....	9. Out-patient clinic.....	4	12	24		18
Gilman, Kimberlin.....	10. Surgical ward: Lane Hosp.	2	14	25	15	15
Blaisdell.....	11. Surgical lab.: Tumors.....	6	9			19
Cowan, Towne.....	12. Surgical laboratory: General surgical pathology.....	6	3	24	24	4
McKee, Sharpe.....	13. Ophthalmology.....	1	13	7	16	
Cowan, Gilman.....	14. Surgical clinic: Lane Hosp.	4	9	7	11	6
McKee, Sewall, Ely, Rigdon.....	14a. Set clinic in surg.: Specialt's	1		7	8	2
Rixford, Eloesser.....	15. Surgical clinic: S. F. Hosp.	4	8	4	4	
Rumwell, Gilman.....	16. Out-patient clinics.....	1	1	2	10	
Cowan, Gilman.....	17. Wards of Lane Hospital.....	1	2		8	
Towne.....	18. Operative surgery on the cadaver.....	2		11		5
Ely, Langnecker.....	19. Orthopedic surgery.....	3	7	2	3	4
Rigdon, Dillon.....	20a. Genito-urinary surgery.....	5	13	10	10	4
Woolsey, Dillon.....	20b. Genito-urinary surgery.....	1	4	7	2	
McKee, Sharpe.....	21. Ophthalmology.....	4	16	13	15	5
Sewall, Bacher.....	22. Otology, etc.....	3	16	15	14	5
Totals.....			221	209	265	100

STANLEY STILLMAN,
Professor of Surgery.

MILITARY SCIENCE AND TACTICS

The instructing force in the department for the academic year 1919-20 was as follows: Captain Samuel M. Parker, retired, professor of military science and tactics and infantry instructor until March 19, 1920, on which date he was relieved by War Department orders; Captain Leroy P. Collins, Field Artillery, senior field artillery instructor, and professor of military science and tactics for the remainder of the year; assistant professors: Captain Stuart A. Howard, Infantry, who relieved Captain Parker on March 19, 1920, and Captain Howard Eager, Field Artillery.

The field artillery unit was organized at the beginning of the school year with complete equipment authorized except that only 64 horses were secured instead of the 90 authorized. It is intended to bring the number up to the latter figure before the beginning of the fall quarter. The buildings to house the field artillery unit constructed by the college were occupied on November 25, 1919, and proved adequate for the purpose. A well constructed building was obtained at Camp Fremont by authority of the Commanding General, Western Department. It was moved in sections by the detachment and is now used as a motor repair and storage shop with a storeroom in one end. It will be necessary to construct another set of stables of about half the size of the present one to properly care for the increased number of horses, and a small frame blacksmith shop for shoeing, the present accommodations being inadequate.

Polo was started during the spring quarter as a part of the regular field artillery course. About 30 men have been learning the game which has proved interesting to students and it is believed that the sport is a distinctive addition to Stanford athletics. This was made possible by an appropriation of \$200 made by the Board of Athletic Control and voluntary contributions of students.

The following tables show the courses and enrolment in each for the field artillery and infantry units:

FIELD ARTILLERY

INSTRUCTOR	COURSE	Units	First Quarter	Second Quarter	Third Quarter
Collins.....	1a. Matériel.....	3	51		
Eager.....	1a. Matériel.....	3	23		
Collins.....	1b. Practical F. A. work and equitation..	1 & Univ. req.	64		
Eager.....	1b. Practical F. A. work and equitation..	1 & Univ. req.	10		
Collins.....	2a. Gunnery.....	3		27	
Eager.....	2a. Gunnery.....	3		33	
Collins.....	2b. Practical F. A. work and equitation..	1 & Univ. req.		42	
Eager.....	2b. Practical F. A. work and equitation..	1 & Univ. req.		22	
Collins.....	8a. Gunnery—advanced.....	3		4	
Eager.....	3a. Fundamentals of military science.....	3			49
Collins.....	4a. Motors and motor transportation.....	3			11
Collins.....	8a. Gunnery—advanced.....	3			1
Collins.....	3b. Practical F. A. work, equitation and polo.....	1 & Univ. req.			61
Totals.....			148	128	122

Fifteen students were sent to the field artillery R. O. T. C. camp at Camp Knox, Kentucky, for a six weeks' course of instruction.

Three students satisfactorily completed the requirements of the advanced course and have been recommended to the War Department for commission as second lieutenants, Field Artillery, Officers' Reserve Corps.

INFANTRY

INSTRUCTOR	COURSE	Units	First Quarter	Second Quarter	Third Quarter
Parker.....	1a. Military art—Practical.....	Univ. req.	62	58	.....
Parker.....	1b. Military art—Theory.....	1	13	18	.....
Parker.....	4a. Military art—Advanced.....	2	20	21	.....
Howard.....	1a. Military art—Practical.....	Univ. req.	.....	.....	57
Howard.....	1b. Military art—Theory.....	1	.....	.....	8
Howard.....	4a. Military art—Advanced.....	2	.....	.....	20
Totals.....			95	97	85

ENROLMENT BY QUARTERS

	First Quarter	Second Quarter	Third Quarter
Field Artillery unit.....	74	64	61
Infantry unit.....	62	58	57
Both units.....	136	122	118

No students attended the infantry camp at Camp Kearny, Calif. Five students satisfactorily completed the requirements of the advanced course and have been recommended to the War Department for commission as second lieutenants, Infantry, Officers' Reserve Corps.

There were no courses during the summer quarter.

LEROY P. COLLINS,
Captain, Field Artillery,
Professor of Military Science and Tactics.

MINING AND METALLURGY

(Graduate Department)

The faculty of this department for its first year, 1919-20, consisted of Professors Theodore Jesse Hoover and James McDonald Hyde, Associate Professor Waldemar Fenn Dietrich, Assistant Professor Carl Hugh Beal, and Teaching Assistants Elmer Walter Pehrson and John Alfred Potter.

The courses of instruction given and the enrolment in each were as follows:

INSTRUCTOR	COURSE	Unit Hours	Enrolment		
			First Quarter	Second Quarter	Third Quarter
Hoover.....	1. History of mining.....	1		34	
Hoover.....	2. Mine valuation.....	1	5		
Hoover.....	3. Mine organization.....	1		10	
Hoover.....	4. Mine management.....	1			7
Dietrich.....	5. Principles of mining.....	4	50		24
Dietrich.....	6. Prospecting.....	1-2	1	6	
Dietrich.....	7. Development.....	3			6
Hyde.....	12. Principles of metallurgy.....	4		10	
Hyde.....	14. Concentration processes.....	2		5	
Hyde.....	15. Hydrometallurgy of gold and silver.....	3	5		
Dietrich.....	18. Pyrometallurgy of iron and steel.....	3	100		
Beal.....	24. Principles of petroleum mining.....	3		37	
Beal.....	24b. Principles of pet. min.....	3			34
Beal.....	25. (No. 17).....	2		1	
Dietrich.....	29. Laboratory.....	2	2		
Dietrich.....	29a. Mining.....	1		6	
Hoover.....	30. Organization.....	2	6	7	
Hyde.....	35. Ore dressing.....	3		3	
Hyde.....	36. Hydrometallurgy (Lab.).....	2	3		
Hoover.....	40. Metallurgical research.....	4			1
Hyde.....	41. Assaying.....	5	4	4	
Hoover.....	44. Factors in oil production.....				1
Beal.....	45. Special work in petroleum.....				3
Totals.....			176	123	76

The registration of students in the department was fourteen, ten of whom were Stanford men; four were students from other institutions—Paul Francis Kerr, Occidental College; Clifford L. Mitchell, University of Oregon; Takeo Shikamura, Tokio Imperial University; and Hsueh Hsiao Wu, Pei Yang University, and Carnegie Institute of Technology.

The degree of Engineer of Mines was granted to four students: Arthur Warren Ambrose, Carl Hugh Beal, Ezra E. Erich, and Elmer Walter Pehrson. These degrees were partially earned in the former Department of Geology and Mining.

Two fellowships were created by gifts to this department totaling \$1200, each for two years; for the year 1919-20 they were held by Aubrey Arthur Curtice and Herschel Livingston Driver.

Through the efforts of the department, two research funds have been created; one by contributions of the Standard Oil Company, the General Petroleum Company and the Associated Oil Company, of \$2000 each, to be used in petroleum research; the other by contribution of the Pacific Steel Company of \$500, with further promise, to be used in research in charcoal fuel.

THEODORE JESSE HOOVER,
Professor of Mining and Metallurgy.

PHILOSOPHY

The instructing staff for 1919-20 consisted of Henry Waldgrave Stuart, professor; Harold Chapman Brown, associate professor; and Edward Scribner Ames, acting associate professor.

The courses of instruction offered and the attendance for the year are given in the accompanying table:

INSTRUCTOR	COURSE	Units	Attendance			
			Fall	Winter	Spring	Summer
Stuart.....	1. Elementary logic.....	5	60			
Brown.....	1. Elementary logic.....		65			
Stuart.....	2a. Elementary ethics.....	5	75			
Stuart.....	2b. Ethical principles and practical life.....	5		16		
Brown.....	3. History of philosophy.....	4		24	45	
Brown.....	4. Modern scientific conceptions.....	4		87		
Brown.....	5. Esthetics.....	4			101	
Stuart.....	7a. Advanced logic.....	4		14		
Ames.....	7b. Introduction to philosophy.....	4				27
Ames.....	9. Religion.....	4				25
Brown.....	10. Problems of contemporary philos.....	4				9
Stuart.....	11. Seminar: Kant's ethics.....	5	6			
Brown.....	11. Seminar: Consciousness.....	5			12	
Totals.....			206	141	158	61

Eighteen major students were enrolled in the department during the year of whom 2 were graduates and 16 undergraduates. Mr. H. M. Fletcher expects to complete his Master's thesis this summer on "The theory of sympathy in Adam Smith's 'Moral Sentiments.'" Mr. J. G. Locke also expects to complete his Master's thesis this summer on "An interpretation of the philosophy of Spinoza."

Professor Stuart exchanged work with Professor Ames of the University of Chicago for the summer quarter. In April Professor Stuart presented a paper at the Wisconsin meeting of the Western Philosophical Association on "A reversal of perspective in ethical theory." This paper is to be published shortly in the Philosophical Review.

Professor Brown has been continuing his work on the scientific foundations of philosophy in preparation for a book, the introductory chapter of which has appeared in the *Journal of Philosophy*, etc., for May, 1920.

HAROLD CHAPMAN BROWN,
Associate Professor of Philosophy.

PHYSICAL EDUCATION

ENCINA GYMNASIUM

The registration of the department for the year was as follows, students attending three or more one-hour periods each week to meet the requirements of the University: Fall term, 981; winter term, 882; spring term, 747.

The total attendance of Stanford students using the department for exercise for the year is estimated at 102,000; the daily average was 400.

The departmental staff for the year, with activities assigned to each member consisted of:

Alfred David Browne—Associate Professor and Director and Medical Adviser.

Administration;

Lectures in Public Health and Hygiene;

Lectures in Aid to Injured;

Chairman Faculty Athletic Committee;

Member of Board of Athletic Control;

Member of Public Health Committee.

Henry Wilfred Maloney—Assistant Director:

Instructor in Track and Field Athletics.

Rugby, Soccer, Boxing, Wrestling, Fencing.

Ernest M. Brandsten—Assistant Director:

Instructor in Aquatics.

Melbourne C. Evans—Instructor:

Instructor in American Foot Ball, Basket Ball, Base Ball.

Arthur Louis Acker—Instructor:

Assistant in Foot Ball, Basket Ball, Track.

Instructor in Intramural Athletics.

E. W. Moulton—Assistant:

Track and Field Athletics.

N. A. Moore—Store Room Attendant.

Student Assistants—C. D. Hudson, Gymnastics; R. G. Rogers, Gymnastics; J. T. Murphy, Boxing; J. Jones, Wrestling; R. V. McCullaugh, Wrestling; James Wiley, Rugby; James Quinby, Soccer; R. L. Kahle, Fencing.

The main policy of the department the past year has been to develop plans laid down by the Board of Athletic Control, which is a body representing students, faculty, and alumni, and to keep alive the splendid athletic spirit which is typical of Stanford, and made possible by the

untiring efforts of such individuals as the members of the Athletic Committee under the chairmanship of Dr. Angell, the Board of Control, and my predecessor, Dr. Stolz.

There has been a rapid growth of the system the past year, due not to any increase in college population, but rather to the increasing demand of certain practical ideas concerning the function of physical education and medical supervision.

Central among such ideas is the thought that the University must assume the responsibility for the suitable health education and protection of every student in attendance. It means an adequately organized department, suitable equipment, apparatus and supplies, expert instruction and courses of training, an organization adapted to the needs of the students and everything, in short, that the student body requires to make them efficient members of society.

We have barely begun to work out this idea, an idea which every educationally progressive community is working on today, but our beginnings, as you know, have already served to increase materially the cost of carrying on the work of the department.

The increased cost of the department is naturally one of the first and most striking changes that attracts attention. We should make no effort to deny or conceal the fact that both the total and per capita expense of carrying on the department has increased and that the tendency will be for it to continue to increase so long as we devote ourselves seriously and progressively to the working out of the simple idea that it is the function of the University to give Stanford students those things which count for most in their thorough training. I am confident that adequate financial support will grow with the growth of everyone's understanding and appreciation of the work that the department is doing for the mass of students, and of the work that still must be undertaken. I am planning to get out a pamphlet in the fall which will show the scheme of organization of the department and the various enterprises carried on for the physical and social benefit of the mass of students, and the needs of further extension.

Since October 1st, I have had conferences with four hundred and thirty men concerning health matters. Some of the students were required to report as often as four times. I have endeavored to meet every first-year man and have an interview with each one in Encina Gymnasium. I have given five hundred and eighty examinations. Each examination included eye, ear, nose, throat, teeth, heart, skin, and general condition. Records show over three thousand visits to the medical office for emergency treatment and advice.

The following scheme of organization is followed. Each freshman is given a medical examination in the fall. Instruction is given in the form of advice based upon the examination. The student's attention is called to any condition that may, with proper treatment, improve his health. Should medical or surgical attention be necessary, in the opinion of the adviser, he is notified and the department endeavors to assist by cooperation with the student and his physician in correcting the defect.

The office hours of the medical adviser are 11 to 12 and 4 to 6, these hours being the best for students to visit the office.

No candidate for any of the major sports or strenuous minor sports may begin training until approved by the medical adviser.

Emergency treatment is the only treatment attempted by the department.

PHYSICAL TRAINING ACTIVITIES

All freshmen and sophomores are required to attend three one-hour periods each week, unless excused by the medical adviser.

A considerable number of upper classmen and graduate students participate in the activities conducted by the department.

In the field of intramural athletics substantial progress has been made in the way of organization and extension of the work.

The following table showing the number of teams, games, and contestants in each sport, is presented:

ACTIVITY	SERIES	No. of Teams	No. of Games	Con- testants
Basketball.....	Interclass.....	4	12	40
Basketball.....	Inter organization.....	46	263	428
Baseball.....	Inter organization.....	36	210	532
Track.....	Interclass.....	4	1	100
Track.....	Interclass.....	4	1	250
Track.....	Inter organization.....	33	5	649
Soccer—Fall.....	Interclass.....	4	12	78
Spring.....	Interclass.....	4	38	60
Tennis.....	Novice.....	1	1	40
Tennis.....	Murray.....	1	1	60
Tennis.....	Open.....	1	1	20
Cross Country.....	Interclass.....	4	6	62
Swimming—Fall.....	Interclass.....	4	1	40
Spring.....	Interclass.....	4	1	30
Swimming.....	Inter organization.....	20	1	40
Water Polo.....	.....	8	24	52
Hand Ball.....	Open tournament.....	1	1	48
Wrestling.....	Open.....	4	1	36
Boxing.....	Interclass.....	4	1	32
Totals.....		187	581	2597

For the past year the work of the intramural division has necessarily been in a large measure that of organization. The various activities have been placed on a more orderly and substantial basis and students have been engaged in the management of the teams and of the sports.

The progress the past year has been so satisfactory that with the view of interesting more students in the various phases of competitive athletics, by a closer grading of the fitness of individuals to compete, by the introduction of new games to interest those who are physically unable to compete in the more strenuous contests, and by the organization of activities during special periods, the Board of Athletic Control has

appointed a member of the staff to the position of Director of Intramural Athletics.

No doubt the establishment of this division of intramural athletics was a large step in the realization of the desire for "athletics for all" and a vast amount of good has been done to the student body generally. It is the earnest desire of the Board of Athletic Control to further this work in all ways possible.

During the year intercollegiate athletics have been carried on as usual. While fully appreciating the fact that a high position in the way of contests won is not the sole nor perhaps the chief feature to be considered in measuring the success of a season, the Board has felt that it was not at all an unworthy ambition that our intercollegiate teams make a record in keeping with the standing and character of the University, providing, of course, that there be no departure from clean and wholesome competition and no sacrifice of the true spirit of amateur sport. With that in mind, the Board has given very full consideration to the various suggestions for the strengthening of the organization and teaching staff of this division.

The following is the number of intercollegiate contests held during the year and the number of teams representing the University :

SPORT	No. of Teams	No. of Games
Football.....	Varsity	7
Football.....	Freshman	6
Football.....	2d Varsity	2
Basketball.....	Varsity	15
Basketball.....	Freshman	13
Baseball.....	Varsity	23
Baseball.....	Freshman	10
Track.....	Varsity	9
Track.....	Freshman	5
Crew.....	Varsity	1
Crew.....	2d Varsity	1
Crew.....	Freshman	1
Tennis.....	Varsity	8
Tennis.....	Freshman	1
Swimming.....	Varsity	5
Swimming.....	Freshman	3
Rugby.....	Varsity	17
Soccer.....	Varsity	10
Soccer.....	Freshman	2
Water polo.....	Varsity	8
Water polo.....	Freshman	1
Boxing.....	Varsity	3
Boxing.....	Freshman	1
Hand ball.....	Varsity	7
Fencing.....	Varsity	1
Cross country.....	Varsity	1
Golf.....	Varsity	2
Totals.....	28	163

The total number of teams and of games for the year is as follows:

	No. of Teams	No. of Games
Intercollegiate.....	27	163
Intramural.....	187	581
Totals.....	214	744

The Board in recommending, and the President who has given his approval of designating the members of the staff as Director of Track, foot ball, base ball, etc., with the same responsibility to the University that any other teacher has, are giving notice that intercollegiate athletics are regarded as an incidental part of a general system of physical training which is conducted to meet the needs of all students.

The marked interest in many sports, such as base ball, basket ball, and tennis, is interesting the Board in working out plans for more base ball fields and tennis courts. To relieve the congestion on the gymnasium floor for basket ball, it is recommended that a pavilion be erected which will accommodate the spectators and provide adequate space for the many intramural teams desiring to play. Such a floor may be used eight months in the year and provide space for doubling the number of exercise hours of the students. The building can also be used for dances and other social events if provision can be made for cloak-rooms, toilets, and kitchen and pantry.

The Board has expended about twelve thousand dollars the past year in permanent improvements, viz., well and pump for the swimming pool, handball courts, and outdoor apparatus in gymnasium yard, portable bleachers which can be moved and used as occasion requires, improvements on the track, and new tennis courts.

Stanford can use about sixty tennis courts and at the present time we have only six available. Two courts for intercollegiate use will be built this summer, and next year the Board will try to build twenty courts for general use.

Consideration is also being given to clearing several fields for base ball, to plans for the erection of a stadium, and general improvements surrounding the present athletic fields.

ALFRED DAVID BROWNE,
Director of Encina Gymnasium.

ROBLE GYMNASIUM

The staff of Roble Gymnasium for the year 1919-20 consisted of Helen Masters Bunting, Associate and Acting Director; Ethel Dale Owen, M. D., Acting Medical Adviser; Greta Johansen Brandsten and Yolanda Shaw Allen, instructors; and Sarah Truair Hollands, secretary. In the absence of Dr. Clelia Duel Mosher Dr. Owen served for the autumn,

winter, and spring quarters, and Dr. Pearl P. Penfield made the medical examinations of students registering for the summer quarter.

The aim of the department has been to further the best interests of the health of the women students of the University and to cultivate a spirit of democracy and true sportsmanship. Physical examinations were given to all students taking work in the department, and each student was then assigned to the type of work best suited to her particular needs. All students were re-examined in the spring quarter so that any improvement could be noted. In order to further the best interests of the students and of the department, the required work was put upon a credit basis, giving one unit of credit per quarter, and thus increasing the required number of units for graduation to one hundred eighty-six; which change applies to students entering in the autumn quarter 1920.

In order to give an all-round development to each student, the required six quarters of work in physical education are divided as follows: athletics, one quarter; Swedish gymnastics, two quarters; dancing, one quarter; swimming, one quarter; and the sixth quarter the student may choose any course offered in the department.

The courses given and the number of students registered in the department for 1919-20 were as follows:

AUTUMN QUARTER

Dancing	109
Hockey	92
Swimming	94
Tennis	56
Total	351

WINTER QUARTER

Basket ball.....	53
Gymnastics	211
Swimming	32
Playground management.....	7
Theory of gymnastics.....	6
Total	309

SPRING QUARTER

Archery	36
Base ball.....	53
Dancing	21
Tennis	76
Swimming	63
Playground management.....	7
Total	256

The number of elective students for the autumn quarter was 41, for the winter quarter 96, and for the spring quarter 63, making a total of 200 elective students for the three quarters. The total registration for all the courses for the three quarters was 916.

During the summer quarter 1920 swimming was the only activity carried on in the department. The registration was as follows: University students 60, University Faculty and Administrative Staff, faculty children, and others not connected with the University 86; making a total of 146 persons registered in swimming classes. Lessons were given three days a week, and the pool was open for all swimmers on the other three days each week. This arrangement proved to be a source of much wholesome recreation for the community. The total number of tickets taken in for swimming during the summer quarter was 2749.

A series of six hygiene lectures was given to all Freshmen and Sophomore women by the Acting Medical Adviser and the Acting Director of the department jointly. The Acting Director also gave the two theory courses referred to above, viz., Playground management and Theory of gymnastics; which courses were given in order to complete the teaching major requirements for a few students. Much time was spent, both in committee and outside of committee, on preparing an outline for a comprehensive course for the preparation of teachers of physical education, in order that Stanford may assist in supplying the need of the state for these special teachers. The Acting Director of the department considers it inadvisable to give any more theory courses until such time as a thorough professional course may be instituted.

Plans were drawn for the new athletic fields for women, and it is expected that the opening of the autumn quarter 1920 will see a part of them ready for use. The complete equipment of the fields and a new gymnasium for the women are most urgently needed.

Close cooperation was established between the Department and the Women's Athletic Association. The Acting Director of the department served on the Executive Board of the Women's Athletic Association, and coaching for all the activities of the Association was supplied by the department staff without cost to the Association. A Faculty Committee on Women's Athletics was appointed by the President of the University for furthering the interests of women's athletics. (A report of that committee is printed elsewhere in this volume.)

The Acting Director served on the following committees during the past year: Faculty Committee on Women's Athletics (Chairman), Public Health Committee, and Executive Board of Women's Athletic Association.

The Acting Director attended the following conferences during the past year: The Western Conference of Women's Athletic Associations, held at the University of Washington, Seattle, Washington; Conference on Professional Courses in Physical Education, called by Dr. Hetherington, at the University of California; Conference of the Western Section of the American Physical Education Association, at which conference she gave a brief paper on "Athletic Competitions for College Women."

The Acting Director for the past year has been made the Director for the ensuing year. Dr. Mosher will return as Medical Adviser, and Marjorie Lois Kendall has been appointed as an additional instructor in the department.

HELEN MASTERS BUNTING,
Associate Director, Roble Gymnasium.

PHYSICS

The faculty of the Physics department for the year 1919-20 has consisted of Associate Professor Frederick John Rogers; Assistant Professors Elmer Reginald Drew, Joseph Grant Brown, Perley Ason Ross; and Instructor George Russell Harrison.

The courses given and the registration in each course are given in the table below:

INSTRUCTOR	COURSE	Units		Attendance			
		Lec.	Lab.	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Drew, Harrison..	1. Mechanics.....	2	3	42		36	13
Harrison.....	2. Heat.....	2	3		10		
Rogers, Ross.....	3. Electricity.....	2	3			8	
Brown.....	4a. Sound.....	2	3	6			
Brown.....	4b. Light.....	2	3	7			
Ross.....	5. Adv. physics.....	3		4	5	4	
Brown.....	6a. Mechanics, Heat.....	3	1		100		
Brown.....	6b. Waves and light.....	3	1			91	
Rogers.....	6c. Electricity.....	3	2	63			
Rogers.....	6d. Elec. measurements.....	2	2		51		
Drew.....	7a. Mechanics, Heat.....	3	2	67			
Drew.....	7b. Electricity, Light.....	3	2		72		
Rogers.....	7c. Special topics.....	3				58	
Brown.....	8. Mech. measurements.....		3			2	
Ross.....	10. Anal. mechanics.....	3			5	5	
Drew.....	11. Thermodynamics.....	3			1		2
Rogers.....	14a. Vibratory motion.....	4		5			
Rogers.....	15a. Electrical theory.....	3		2			
Rogers.....	15b. Ions and electrons.....	3			3		
Ross.....	16. Lit. of physics.....	2		2		1	
Brown.....	17. Teachers' course.....				4		
Rogers.....	18. Investigation.....			1	1	1	
Totals.....				199	252	206	15

FREDERICK JOHN ROGERS,
Associate Professor of Physics.

PHYSIOLOGY

The staff of the department consisted of Professor Ernest Gale Martin; Assistant Professors James Rollin Slonaker and Frank Walter Weymouth; Instructors James Percy Baumberger and George Daniel Shafer; and Acting Instructor for the summer quarter James M. D. Olmsted. Assistant Professor Weymouth was absent on leave during the spring and summer quarters.

The courses offered during the year, with the attendance in each, are listed in the table below:

INSTRUCTOR	COURSE	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Martin, Shafer.....	1. El. physiol.....	5	12			
Martin, Shafer.....	2. El. physiol.....	5		12		
Martin, Slonaker, Baumberger.....	3. Nerve and muscle.....	5		42		
Martin, Slonaker, Baumberger, Shafer.....	4. Circulation, digestion.....	5			42	
Weymouth, Baumberger, Martin, Baumberger, Olmsted.....	5. Sense organs.....	5		32		
	S. General physiol.*.....	5				11†
Department Faculty.....	6. Journal club.....	1-2	2	7	8	
Martin, Slonaker.....	7. Adv. physiol.....	2-5	3	7	5	2
Martin.....	8. Research.....	3-7	1		1	
Totals.....			18	100	56	13

*Course 6, Hopkins Marine Station.

†Including one registered for the first term of summer quarter only.

During the year Miss Perry, a graduate student, completed the work for the degree of M. A. The title of her thesis was "A statistical study of neuro-muscular coordination." The examples of neuro-muscular coordination selected were those exhibited by industrial workers in the course of their daily tasks.

Dr. Shafer continued his investigation of the artificial control of mating in the honey bee, and also studied growth and moulting in the larval stages of dragon flies.

Drs. Baumberger and Olmsted carried on during the summer quarter a biometric study of three species of Grapsoid crabs; also a study of physiology of moulting in Grapsoid crabs. Both these studies, with that of Dr. Shafer, mentioned above, form portions of a general study of the physiology of growth in which the laboratory of Physiology is engaged.

Dr. Baumberger carried on during the year investigations in industrial physiology as follows: Fatigue and working capacity as affected by alternating operations, rest periods, and pride of craftsmanship; Tolerances in the glass bottle trade in relation to Weber's law and visual judgments

of size; Fatigue and error in clerical work, studied by the use of a normally recurring routine operation. These studies were made possible through the courtesy of the superintendents of the establishments in which they were carried on.

Assistant Professor Weymouth continued his work with the California Fish and Game Commission. A general report on the economic bivalves covering their range, habits, and use together with a key and figures is now ready for the press. Detailed work on the Pismo clam (*Tivela*), in which the problem of growth and the physical and physiological factors affecting it are the subjects of investigation, is now well advanced.

Assistant Professor Slonaker completed and sent to press papers as follows: Some morphological changes for adaptation in the mole; The development of the eye and its accessory parts in the English sparrow (*Passer domesticus*); The physiology of accommodation in the eye of the bird; Computing ages of animals. Professor Slonaker is bringing near to completion eight years' work on the effect of reduced diet on reproduction and the young of the albino rat; he is also studying the effects of estruation and gestation on the activity of the albino rat.

Professor Martin continued his connection as Scientific Assistant in the United States Public Health Service. In this capacity he completed and sent to press a report on strength tests in industry. During the year he was appointed a member of the General Committee to study the Tobacco Problem and of the sub-committee on experimentation of the General Committee. Under this latter head he was assigned the problem of the relation of tobacco use to industrial efficiency, and the investigation of the nicotine content of various brands of tobacco smoke. He was assisted in these studies by Dr. Baumberger, Miss Anna Franklin, and Messrs. W. T. Martin and Stirling Pillsbury.

Other investigations by Professor Martin were as follows: with Miss Anna Franklin and Mr. Clarence Hield, vasomotor reflexes from receptor stimulation in intact animals; with Mr. L. A. Jacoby, the vasomotor response in man from warming a large area of the skin; with Mr. Blake Wilbur, salt antagonism in the brine shrimp (*Artemia*).

During the year the department had the good fortune to be able to offer its facilities to the department of medicine in connection with the investigation of Botulism being conducted in that department by Dr. E. C. Dickson. As a result of the arrangement Mr. Richard Shevky spent the second half of the year in the physiological laboratory, carrying on experiments on Botulism.

ERNEST GALE MARTIN,
Professor of Physiology.

POLITICAL SCIENCE

The teaching staff in Political Science for the year consisted of Victor J. West and Edwin Angell Cottrell, Professors, and Louise Overacker, research assistant.

Professor James Wilford Garner, of the University of Illinois, served as acting professor during the summer quarter, giving courses in comparative government and political theory.

Mr. Cottrell during the year gave a series of twelve lectures on Municipal Administration under the auspices of the Association of Collegiate Alumnae of San Jose. During the winter quarter he directed a business survey and membership campaign for the Palo Alto Chamber of Commerce. In addition he delivered a number of addresses on governmental topics in San Francisco, San Jose, Burlingame, Palo Alto and Santa Clara. He served as chairman of the Committee on Prizes of the National Municipal League, and in December, 1919, was elected to the Executive Committee of the American Political Science Association.

Research: Mr. Cottrell has continued his study of budget procedure in American cities. Mr. West is working on a study of corrupt practices legislation in the United States, and continuing the study begun by him and Professor E. E. Robinson of the History department in 1917, of the foreign policy of President Wilson.

Enrolment: The total number of major students in the department was 39. The enrolment in classes was as follows:

INSTRUCTOR	COURSE	Units	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Overacker.....	A. American government.....	3		15		
West.....	1. Elements of political science.....	5	203		67	
Cottrell.....	2. State and local government.....	5		54		
West.....	10. Federal government.....	4				9
Garner.....	10a. Comparative European govt.....	4				18
Cottrell.....	11. Parliamentary government.....	4			23	
West.....	13. Legislation.....	3			15	
Cottrell.....	14. Administration.....	4	30			
Garner.....	20. History of political theory.....	4				15
West.....	23. Political parties.....	4				9
Cottrell.....	25. Municipal administration.....	4			38	
Cottrell.....	26. Governmental research.....	4	24			
West.....	30. Seminar.....	3	10			
Cottrell.....	31. Seminar.....	3		7		
Totals.....			267	76	143	51

Departmental changes: Miss Overacker leaves at the end of the year to accept a position as instructor in political science at Vassar College. Mr. West will be on sabbatical leave of absence during the year 1920-21. He will be attached to the United States Bureau of Efficiency, Washington, D. C. His classes will be in charge of Mr. Frank Marion Russell, formerly of the State College of Washington, Pullman, Washington.

VICTOR J. WEST,
Professor of Political Science.

PSYCHOLOGY

The department faculty for the year 1919-20 consisted of Frank Angell, professor; John Edgar Coover, assistant professor and research fellow in psychic phenomena; Gardner Cheney Basset, assistant professor; and Gertrude May Trace, teaching assistant. During the summer quarter, Raymond Holder Wheeler, Professor of Psychology, University of Oregon, served on the staff as acting instructor.

The courses given, and the attendance were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance			
			Autumn Quarter	Winter Quarter	Spring Quarter	Summer Quarter
Angell.....	1. General psychology.....	3	221	80		
Wheeler.....	1. General psychology.....	4				36
Trace.....	2. Experimental psychology.....	3	14	16	19	
Coover.....	2. Experimental psychology.....	3	16			
Wheeler.....	2. Experimental psychology.....	2				22
Basset.....	3. Mental hygiene.....	3	90			19
Coover.....	4. History of psychical research.....	2	23			
Basset.....	5. Abnormal psychology.....	3		26	43	
Trace.....	6. Experimental psychology.....	3	16	19	11	
Coover.....	7. Statistical methods.....	3		6	3	
Coover.....	8. Psychophysical methods.....	2-3		3		
Trace.....	9. Social psychology.....	2			37	
Basset.....	10. Abnormal psychology (Clinical).....	3-5		10	21	6
Angell.....	11. Adv. laboratory work.....	3	7	5	2	
Coover.....	15. Mind and body.....	5			8	
Angell.....	16. Current psychological literature.....	2	5	4	3	
Coover.....	18. Psychical research.....	1-3	2	7	5	
Angell.....	20. Research.....	3	2			
Totals.....			399	176	152	83

The total registration was 810. The figures for the attendance in the elementary laboratory courses indicate that the limits of teaching force and of laboratory space have been reached and that any increase in attendance in these courses will necessitate an increase in teaching force and will call for additional room.

Dr. Gardner C. Basset was appointed to an assistant professorship and took charge of the work in abnormal and clinical psychology, and Miss Gertrude Trace was given entire charge of the elementary laboratory work. Dr. Basset has now resigned, to go to Reed College, as head of the department of psychology. Miss Trace has been promoted to an instructorship, beginning the next academic year.

At the end of the year plans were submitted to the President looking towards an extension of the activities of the department in the direction of abnormal psychology, with the view of bringing the work in psychology and psychiatry into more fruitful contact.

FRANK ANGELL,
Professor of Psychology.

ROMANIC LANGUAGES

The department faculty for the year 1919-20 consisted of Oliver Martin Johnston, professor; Pierre Joseph Frein, acting professor (summer quarter); Clifford Gilmore Allen, Aurelio Macedonio Espinosa, associate professors; Stanley Astredo Smith, Alfred Coester, assistant professors; Felipe Morales de Setién, acting assistant professor (summer quarter); Louis P. de Vries, John Armstrong Sellards, instructors; Ida Stauf, Otto Carl Gebert, Elizabeth Dana Woodbridge, Grace Elizabeth Jones, John Parsons Weller, Ethel Lee, Ivan Rush Messenger, Albert Marion Zeitlin, Helene Marie Hall, Dorothy Leeds Walsh, assistants in instruction.

During the summer quarter Professor Pierre Joseph Frein, head of the Department of Romanic Languages at the University of Washington, served at Stanford with the title of acting professor of French, and Assistant Professor Felipe Morales de Setién of the University of Southern California was acting assistant professor of Spanish.

The total number of major students registered in the department was 119, of whom 75 were majors in French and 44 majors in Spanish. Eighteen received the degree of A. B.

The number of graduate students registered in the department was 15. The degree of Master of Arts was conferred upon:

William Leonard Schwartz, thesis, "L'influence du Japon sur la littérature et l'art français pendant la dernière moitié du XIX^e siècle;" Edith Clare Spare, thesis, "The Women of Honoré de Balzac;" Marion Albert Zeitlin, thesis, "Past definite and imperfect indicative in French."

The degree of Doctor of Philosophy was conferred upon Otto Carl Gebert, thesis, "Les termes techniques militaires dans les traductions de Végèce."

The courses given were as follows, with attendance as indicated:

INSTRUCTOR	COURSE	Unit	Hours	Attendance			
				First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Gebert, Stauf, Weller, Woodbridge							
Zeitlin.....	A1-A3 Elementary French.....	5	186	156	121		
Woodbridge.....	A1-A2 Elementary French.....	5		33	33		
de Vries, Sellards, Stauf.....	A21-A23 Second-year French.....	5	160	142	108		
Sellards.....	A21. Second-year French.....	5				6	
de Vries.....	A24. French pronunciation.....	3			14		
Sellards.....	A25. French conversation.....	1-2		21		12	
Johnston, Sellards.....	A30. Directed reading.....	1-2	15	5	10	2	
Smith, Sellards.....	A41-A43. Advanced French composition and conversation.....	3	36	28	16		
Frein.....	A41. Advanced French composition.....	3				8	
de Vries.....	A44. French classics.....	4		29			
Smith.....	A51-52. Fourth-year French composition and conversation.....	3		13	7		
Smith.....	A57. French literature, Outline course.....	3			6		
Smith.....	A58. XVII Century French literature.....	3	15				
Smith.....	A59. XVIII Century French literature.....	3		9			
Frein.....	A60. French short story.....	3				7	
Frein.....	A61. XIX Century French drama.....	3				10	
de Vries.....	A62. French novel.....	4	48				
de Vries.....	A63. French drama.....	4			43		
de Vries.....	A64. Literary criticism.....	3		35			
Sellards.....	A66. Contemporary French novel.....	3			26	12	
Johnston.....	A67. Problems of teaching French.....	3				8	
Johnston.....	A72. French Arthurian romances.....	2				9	
Johnston.....	A73-74. French seminary, Floire et Blancheflor.....	3	5	4			
Gebert, Hall, Jones, Lee, Messenger, Walsh.....	B1-B3. Elementary Spanish.....	5	216	143	133		
Gebert.....	B1-B2. Elementary Spanish.....	5		26	28		
Allen, Coester, Espinosa, Gebert.....	B21-B23. Second-year Spanish.....	5	102	94	76		
Coester.....	B21. Second-year Spanish.....	5				9	
Espinosa.....	B24. Spanish pronunciation.....	2		54			
Allen, Espinosa.....	B30. Directed reading.....	1-2	17	8	16		
Espinosa.....	B41-43. Advanced Spanish composition.....	3	42	35	28		
Allen.....	B41. Advanced Spanish composition.....	3				7	
Coester.....	B44. Commercial Spanish.....	3		19		2	
de Setien.....	B47. Fonética Española.....	3				3	
Coester.....	B50. Spanish-American literature.....	3				4	

INSTRUCTOR	COURSE	Unit Hours	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Espinosa, de Setien.....	B51. Curso de composición y estilo.....	3	.....	6	10	4
de Setien.....	B55. Historia de la civilización Española.....	3	.....	.....	.....	7
Allen.....	B56. Spanish literature, Outline course.....	3-5	.....	21	.....	.....
Allen.....	B58. Spanish classics.....	3-5	16	.....	.....	7
Allen.....	B60. Modern Spanish novel.....	3	26	.....	.....	7
Espinosa.....	B61. Teatro Español contemporáneo.....	3-5	.....	9	.....	.....
Espinosa.....	B66. Problems of teaching Spanish.....	2	.....	.....	25	.....
Espinosa.....	B67. Introduction to old Spanish.....	3	10	.....	.....	.....
Espinosa.....	B72. Seminary, Old Spanish ballads.....	3	.....	.....	12	.....
Allen.....	B73. Seminary, Lope da Vega.....	3	.....	10	.....	.....
Smith.....	C1-3. Elementary Italian.....	5	22	7	5	.....
Johnston.....	C52-53. Advanced Italian, Dante.....	4	5	6	.....	.....
Totals.....			921	913	717	124

Mr. Gabriel Henri Grojean, Instructor in French, resigned in September to accept an assistant professorship at the University of British Columbia. Mr. John Armstrong Sellards was appointed Instructor in French to succeed Mr. Grojean.

In November Dr. Alfred Coester was appointed Assistant Professor of Spanish.

Mr. Sellards tendered his resignation in May to take effect at the close of the summer quarter in order to accept a fellowship offered by the Commission for Relief in Belgium for a year of graduate study at the University of Brussels. Dr. Frederick Anderson was appointed Instructor in French to succeed Mr. Sellards.

Associate Professor Espinosa sailed in June for Spain where he is to spend six months collecting folklore for the American Folklore Society.

Toward the close of the academic year Mr. Louis P. de Vries, Instructor in French, resigned to accept an assistant professorship at Washington University and the position left vacant by his resignation was filled for the ensuing year by the appointment of Mr. William Leonard Schwartz as Instructor.

The work of the summer quarter was very gratifying. The students were, as a rule, mature and exceptional in earnestness. Those enrolled in this department were mainly teachers or prospective teachers. There is no better way of developing the teachers of the high schools than by giving them an opportunity to do graduate work during the summer quarter.

OLIVER MARTIN JOHNSTON,
Professor of Romanic Languages.

ZOOLOGY

The department faculty for the year 1919-20 consisted of Charles Henry Gilbert, George Clinton Price, Harold Heath, professors; John Otterbein Snyder, associate professor; Walter Kenrick Fisher and Edwin Chapin Starks, assistant professors.

The classes and the enrolment for each quarter are given in the following table:

INSTRUCTOR	COURSE	Unit Hours	Attendance			
			First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Price.....	1. General.....	5	59			
Starks.....	1. General.....	5		22		
Heath.....	1. General.....	5			29	
Fisher.....	1. General.....	5				6
Fisher.....	2. Ecology of marine invertebrates.....	5				9
Snyder.....	4. The vertebrates.....	5	12			
Heath.....	5. The invertebrates.....	5	8			
Heath.....	6. Invertebrate embryology.....	3		4		
Heath.....	7. Advanced invertebrates.....	5	2	1	3	
Heath.....	8. Microscopic anatomy.....	2				
Fisher.....	9. Research work on invertebrates.....	5				2
Snyder.....	10. Advanced vertebrates.....	5	2			
Snyder.....	11. Comparative anatomy of vertebr't's	5	2	36		
Starks.....	11. Comparative anatomy of vertebr't's	5			31	6
Price.....	12. Mammalian anatomy.....	5				3
Price.....	13. Vertebrate embryology.....	5		32	30	
Price.....	14. Advanced vertebrate embryology.....	5		1	5	
Price.....	15. History of zoology.....	1		8		
Gilbert.....	16. Primitive chordates.....	5	3			
Gilbert.....	17. Fishes.....	5		4		
Gilbert.....	19. Journal club.....	5	5	3		
Totals.....			93	111	98	26

Professor Gilbert has continued his investigations of the salmon fisheries of Alaska in cooperation with the United States Bureau of Fisheries, in the course of which he secured leave of absence from the University during the spring quarter of 1919-20, and spent the greater part of the following six months in the field, examining particularly the Yukon River. A report has been prepared on the Life-history of the sockeye salmon.

Associate Professor Snyder has continued his studies on the life-history of the salmon under the authority of the Fish and Game Commission of California. Vacation periods were spent in field investigations, in which Carl D. Duncan, a student of the department, acted as assistant naturalist.

Assistant Professor Fisher, now in charge of the Hopkins Marine Station, spent the year in the routine work of the Station, and in

continuing investigation of the Asteroidea of the North Pacific. Dr. Fisher has been promoted to an associate professorship beginning with the next academic year.

The collections were enlarged by the addition of a series of fresh water fishes from the Island of Formosa, presented to the University by Mr. M. Oshima, Director of the Department of Biology of the Government of Formosa; by collections of fishes made at Port Said and Ceylon by Chancellor Emeritus Jordan; and also by the gift of about 500 bird skins received from Mr. James N. Proctor, a graduate of the department.

GEORGE CLINTON PRICE,
Professor of Zoology.

APPENDIX III.

COMMITTEE REPORTS

ATHLETICS

The Faculty Athletic Committee for the year consisted of the following: Alfred David Browne, Chairman; John Pearce Mitchell, Augustus Taber Murray, Everett Wallace Smith, Halcott Cadwalader Moreno.

The Committee has considered many matters concerning the general policy of athletics and the rules of eligibility. While the chief function of the Committee is to determine general athletic policy, cooperation with the Board of Athletic Control and Faculty Scholarship Committee is very essential in the matter of legislation and the proper interpretation of rules regulating sports. There is hardly any fear of having athletics go wrong with the three above-mentioned groups of men and the Pacific Coast Conference officials all legislating and enforcing rules.

It is the desire of all, however, to promote clean and wholesome competition and the true collegiate spirit of amateur sport.

It has been realized that participation in intercollegiate athletics, particularly American foot ball, takes up during the season a considerable portion of a student's time and energy. Some young men are able to carry the load and at the same time do creditable college work, but not all are so fortunate. Not infrequently such scholarship difficulties are due to a failure to appreciate the extent of demands of varsity competition and a subsequent selection of a college course that proves to be too heavy.

It seems proper to suggest putting into operation next year the practice of scrutinizing very closely the courses selected by candidates for the major teams, and where it shall appear that a student is attempting too much, he may be advised to cut down the number of academic hours, to limit his athletic practice period, or to drop a sport.

The leeway between the minimum hours required and the maximum allowed is in practically all of the departments of the university sufficient to warrant and permit the shaping of courses so that a student may take part even in football and at the same time keep his college work up to the proper level.

Many young men with athletic ability come to college with a wholly proper desire to take part in intercollegiate sport. Not in-

frequently, because of youth or a false sense of proportion, they make the mistake of over-emphasizing the importance of this branch of athletics, and trouble results, usually to them.

There is no intention to suggest that any leniency be shown athletes not shown to others; they should be required to make the same grade that satisfies in the case of other students—no more nor less. It is believed that the members of the various faculties can do a real service to the students and to the university in this matter, not by "easing up" in the scholastic requirements as to athletes, but by a friendly and sympathetic supervision and advice in regard to the courses elected. This is especially true with regard to freshmen and sophomores and the matter will be called to the attention of the new academic committee appointed to advise with students of the first two years.

Another matter of concern to the Committee and many members of the faculty is the period in each term that teams must be absent from the campus. So long as we maintain relations with the Northwest institutions through the Conference, Stanford teams must travel into the states of Oregon or Washington in each season. We can not ask those teams to come south for the entertainment of Stanford spectators without obligating ourselves to go north. Under the present arrangements the University of California and Stanford have the advantage over the Northwest institutions. While Stanford is appearing in either Oregon or Washington once each season, we may have four Northwest teams visiting our campus each season if we desire and the schedule permits.

The Committee will prepare a statement on this matter and send it to each member of the faculty in the fall.

ALFRED DAVID BROWNE,
Chairman.

BOARD OF ATHLETIC CONTROL

The members of the Board for the year 1919-20 were the following:

Faculty—A. D. Browne, A. T. Murray, J. P. Mitchell.

Alumni—L. W. Cutler, R. W. Barrett, T. M. Williams.

Students—F. L. King (throughout the year), W. I. Ames, R. F. Pelouze, E. R. Caughey, R. L. Templeton (for portions of the year).

Officers—T. M. Williams, chairman; J. P. Mitchell, treasurer.

The year 1919-20 was a year of expansion and adjustment to meet the conditions following the war period. No changes in policy were inaugurated, but many of the plans laid during preceding years were matured. A number of important, permanent improvements to the gymnasium and athletic fields were concluded.

During the year several conferences were held with representatives of the University of California, and mutually satisfactory arrangements covering athletic relations for the future were completed.

At the end of the year plans were made for an enlarged staff for the gymnasium in order to provide for the increased interest in all athletic activities.

The results of the year's operations are best presented by the following extracts from the Treasurer's report, which is printed in full as an appendix to the University publication on the Students' Organizations Fund:

SUMMARY OF RECEIPTS AND EXPENDITURES FOR THE YEAR ENDING
SEPTEMBER 30, 1920

RECEIPTS	
Fees	\$30,369.09
Gate receipts.....	38,981.78
Store at gymnasium.....	1,284.94
Miscellaneous	889.42
Excess of expenditures over receipts (see Note A).....	2,736.57
Total.....	\$74,261.80
EXPENDITURES	
Athletic fields, repairs, maintenance and improvement of fields and bleachers (see Note B).....	\$ 4,706.96
Crew expense.....	3,240.01
Gymnasium expense (including laundry and towels).....	4,042.58
Gymnasium improvements.....	2,673.18
Portable bleachers.....	2,975.00
Intercollegiate sports, supplies, equipment, and expense of minor sports.....	7,925.50
Intramural expense.....	114.00
Interest on loan.....	328.18
Major sports expense.....	12,910.43
Salaries	15,775.63
Tennis courts.....	3,000.00
Treasurer's office.....	410.42
Well and pump, complete.....	5,705.87
Stadium fund.....	3,898.15
Payment on loan.....	4,989.11
All other expenditures.....	1,566.78
Total.....	\$74,261.80

SURPLUS ACCOUNT

1919	
Sept. 30. Deficiency to this date.....	\$4,628.18
1920	
Sept. 30. Interest on Board of Trustees' Loan from 1917 to August 31, 1919.....	1,288.93
“ “ 50% of net surplus for year 1918-19 transferred to Stadium Fund.....	1,736.55
“ “ Deficiency for year 1919-20.....	\$2,736.57
Add miscellaneous charges from Loss and Gain a/c.....	129.21
	2,865.78
	\$10,519.44
1920	
Sept. 31. Payments made on Trustees' Loan during 1919-20.....	\$4,989.11
Total deficiency to date.....	5,530.33
	\$10,519.44

BALANCE SHEET

LIABILITIES

Due Board of Trustees, Loan a/c (balance of \$15,000 loan, with interest charged to 8/31/20).....	\$6,341.09
Due E. B. McDonald, balance due after settlement of sheep account (see Note C).....	1,364.83
Due Ralph Copley, adjustment.....	5.05
Tennis Courts, unexpended balance of appropriation for construction of four courts.....	2,879.45
Stadium Fund (see Note E).....	5,634.70
	<hr/> \$16,225.12

ASSETS

In Bank of Palo Alto.....	\$1,405.64
Cash on hand.....	34.50
Petty Cash.....	25.00
Due by Board of Trustees.....	238.19
Due by Stanford Union on Note.....	1,589.00
Due by Federal Board for Vocational Education.....	87.30
Medical supplies.....	54.00
Invested in Farm (see Note D).....	3,702.31
Invested in Sheep.....	2,500.00
Stock in store.....	1,058.85
Total deficiency to date.....	5,530.33
	<hr/> \$16,225.12

Note A.—This entry shows the amount by which disbursements exceeded receipts for the year. In explanation the following facts should be considered:

(1) On May 18 and June 17, 1920, the Board voted sums aggregating \$1627.86 for sending track teams to the I. C. A. A. A. and the Olympic try-out meets. It was understood at the time that the estimated receipts did not provide for these expenditures.

(2) During the year these permanent improvements have been made: Gymnasium, \$2673.18; portable bleachers, \$2975.00; tennis courts, \$3000.00; well, \$5705.87—which total \$14,354.05. It might be considered permissible to carry a portion of the cost of these improvements as assets, and write them off by means of a depreciation account—to do so would eliminate this deficit. However, in an organization of this character it is a more conservative policy to charge such improvements to current revenue, and not load the assets account with items which have no cash value.

Note B.—This item includes \$1111.48 spent to prepare the football bleachers for the game with the University of California. Part of this was spent for the long benches across, the open end of the field, which increased the seating capacity by several hundred.

Note C.—On April 29, 1920, the Board voted to purchase Mr. McDonald's interest in the flock of sheep as of September 1, 1920. The payment of the amount of this balance will complete the transaction authorized.

Note D.—This is a balance resulting from the operation of past years. There is on hand hay to the value of approximately \$1800.00, and wood to the value of approximately \$400.00. After the liquidation of these items the balance carried as an asset will be reduced to about \$1500.00, which is covered by the tangible value of equipment and livestock.

Note E.—By action of the Board ten per cent of the gate receipts is placed in the Stadium Fund, which should be covered by a corresponding bank deposit. As a matter of fact the shortage of working capital and development of the Farm Account have made it impossible to open a Savings Bank Account to cover the Stadium Fund at the present time. This will be done as soon as possible.

JOHN PEARCE MITCHELL,
Treasurer.

WOMEN'S ATHLETICS

The following Faculty Committee on Women's Athletics was appointed by the President of the University on October 27, 1919: The Misses Bradford, Buckingham, Bunting (Chairman), McCracken, and Stoltenberg. The first meeting of the Committee was held on October 29, 1919, with all members present. The function of the Committee is to determine matters of policy, eligibility, and schedule concerning women's athletics.

Policy: The Committee was unanimous in the opinion that women's athletics should be developed along intramural lines, with the university classification as a basis. Emphasis was therefore laid upon interclass competitions, and such outside competitions as were played were upon an interclass-intercollegiate basis. The Committee went on record as being opposed to varsity intercollegiate athletics for women.

Eligibility: The following regulations were established governing the eligibility of women students for athletic competitions: Class standing shall be determined upon the following basis: Freshmen 0-40 hours passed, Sophomore 40-90 hours passed, Juniors 90-135 hours passed, and Seniors 135-180 hours passed, or until the A. B. degree is granted—and that all players must pass in ten units in each quarter in the Freshman year and in twelve units each quarter in all other years to continue eligible to teams.

Schedule: Interclass competitions were held in hockey, basket ball, base ball, swimming, tennis, archery, and Swedish gymnastics. Interclass-intercollegiate competitions were approved and held with the University of California in hockey, and with Mills College in basket ball. The Committee went on record as favoring competitions with institutions of collegiate rank only.

The Committee approved the training rules for women's athletics as outlined by the Women's Athletic Association.

The Committee approved the sending of a faculty and a student representative from the Women's Athletic Association to the Pacific Coast Conference on Women's Athletics which was held at the University of Washington on May 28th and 29th.

The Committee passed resolutions favoring a re-apportionment of the student body fee to give more financial support to women's activities. As a result of the re-apportionment which was instituted, the sum of fifty cents per woman student per quarter is taken from the apportionment to the Board of Athletic Control and assigned to the Women's Athletic Association. This puts women's athletics upon a firmer financial foundation than ever before, and will allow of some expansion during the coming year.

HELEN MASTERS BUNTING,
Chairman.

LOWER DIVISION ADMINISTRATION

The Committee on Lower Division Administration was organized in June, 1920, with the following membership: John Pearce Mitchell, Chairman; Benjamin Oliver Foster, Everett Parker Lesley, Victor J. West, and Murray Shipley Wildman.

The Committee devoted itself entirely to the task of organizing the Lower Division for the academic year 1920-21. The following arrangements of major importance were made:

In October, 1920, the Lower Division will enroll only new students having less than 30 units of advanced standing. Students registering in the University for the first time in June, 1920, will be allowed, if they so elect, to enroll in the Lower Division in October, 1920. Thereafter, all new students will enroll in the Lower Division.

For the year 1920-21, the course in Problems of Citizenship was arranged in three divisions: Citizenship 1, Social Problems, in the Economics Department; Citizenship 2, Economic Problems, in the Economics Department; Citizenship 3, Political Problems, in the Political Science Department.

It was recommended to the President that a course in General Biology be organized for the academic year 1920-21.

The required History courses were planned for the second year, and arrangements for presenting them were postponed to the academic year 1921-22, with the understanding that approximately equivalent courses would be available as electives in 1920-21.

The necessary arrangements for department prerequisites, elective courses, and record keeping were developed as far as could be done in advance of the actual operation of the Lower Division.

JOHN PEARCE MITCHELL,
Chairman.

PUBLIC EXERCISES

The Committee was composed of Professors Lee Emerson Bassett, Harold Chapman Brown, Arthur Martin Cathcart, Percy Alvin Martin, John S. P. Tatlock, and Stewart Woodford Young. During the absence of the chairman for the autumn quarter the chairmanship was filled by Professor Tatlock.

The following assemblies were held during the year:

October 2. Assembly of Welcome. Mr. Herbert Hoover, an address on "The Peace Treaty and International Affairs." Brief speeches of welcome were given by President Ray Lyman Wilbur, Rev. D. Charles Gardner, Dean Harriet Bradford, and Dean John Ezra McDowell.

October 29. Mr. A. F. Whyte, member of the British Imperial Parliament, Editor of "The New Europe." "The Irish Peace."

November 11. Mr. Yone Noguchi, poet and professor at Keio University, Tokio. "Japan Today."

December 10. Dr. Alonzo E. Taylor, professor of Physiological Chemistry at the University of Pennsylvania. "America's Contributions in Solving the War Problems."

- February 9. Gen. Mesrop Nefton Azgabetian, Commander of Russian-American Division. "The Armenian Situation."
- February 27. Colonel Raymond Robins. "The Challenge of the Hour."
- March 9. Hon. William Kent. "Economics Under Democracy."
- March 16. Dr. Ernest Martin Hopkins, President of Dartmouth College. "Problems of Our Democracy."
- April 8. Miss Helen Taft, Acting President of Bryn Mawr College. "The Education of Women for Political Effectiveness."
- April 16. Mr. Thomas T. C. Gregory. "The European Crisis and What It Means to Us."
- April 23. Mr. John Collier, Director of the Commission of Immigration and Housing. "The Place of the Immigrant in Our Citizenship Program."
- April 29. Dr. David Prescott Barrows, President of the University of California. "The Task of the Universities."
- May 12. President Ray Lyman Wilbur. "The University."
- May 20. Reverend Richard Roberts. "Lloyd George and British Politics."
- July 14. Professor Ephraim Douglass Adams. "Gathering the Hoover War Collection in Europe."

TUESDAY EVENING MEETINGS

The Tuesday Evening meetings were continued without interruption throughout the four quarters. The attendance was about the same as in former years. Occasionally the audiences were so large as to make it necessary to transfer the meetings to the Assembly Hall, which is as much too large for the purposes of the Tuesday evening meetings as the Little Theatre is inadequate for certain attractive programs. The need of an auditorium, such as the proposed Memorial Hall is expected to provide, is urgent. The following lectures, readings and concerts were given:

- October 7. Professor Payson Jackson Treat, an address, "The Shantung Question."
- October 14. Professor William Frederick Durand, an address, "The Devastated Region in France" (illustrated).
- October 21. Miss Edith R. Mirrielees, of the Department of English, an address, "The Red Cross in France and Germany."
- October 28. Mr. A. F. Whyte, member of the British Imperial Parliament, Editor of "The New Europe," an address, "Labor in Great Britain."
- November 4. Professor Allan Abbott, of Teachers' College, Columbia University, an address, "Can the Taste for Poetry Be Measured?"
- November 18. Lieut. Milutin Krunich, late of the Serbian Army, an illustrated address, "Serbia and Her People."
- November 25. Professor Edward K. Rand, Professor of Latin, Harvard University, and Sather Professor of Classical Literature at the University of California, an illustrated lecture, "Libraries in the Middle Ages."
- December 2. Dr. John A. Hobson, of London, an address, "The New Industrial Revolution in Britain."
- December 9. Miss Dorothy Marcuse, pianist, a concert.
- January 6. Prof. Lewis M. Terman, of the Department of Education, an illustrated lecture, "Psychological Tests in the Army, and Their Applications in Peace."

- January 13. Professor James M. Hyde, Department of Mining and Metallurgy, an illustrated lecture on "The Human Side of the Mexican Question."
- January 20. Miss Flora L. Bradford, Field Secretary of the American Red Cross, a lecture, "Red Cross Activities in War and Peace."
- January 27. Abbé Ernest Dimnet, Professor of English Literature, College Stanislas, Paris, an address, "The Return of the Native."
- February 2. Dr. Tully C. Knoles, President of the College of the Pacific, an address, "The Ultimate Test of Democracy."
- February 9. Dr. Ida Smedley MacLean, Research Chemist, Lister Institute, London, an address, "The Influence of the Individual in International Relations."
- February 17. Professor Arthur Percival Newton, of the University of London, an address, "The Organization of the British Empire."
- February 24. Mr. Harry Robertson, tenor, assisted by Mr. Warren D. Allen, pianist, a concert.
- March 2. Bishop Edward Lambe Parsons, an address, "The Call of the World Task."
- March 9. Professor Ephraim Douglass Adams, of the Department of History, an address, "Gathering the Hoover War History Collection in Europe."
- March 16. Schubert Club, a concert.
- April 13. Dr. David Starr Jordan, an illustrated lecture, "The Ascent of the Matterhorn."
- April 20. Mr. Nicholas Vachel Lindsay, readings from his own poetry.
- April 27. Miss Alice Riggs Hunt, an address, "Personalities of the European Labor World."
- May 4. Dr. Henry Osborne Taylor, West Memorial Lecturer, general subject, "The Freedom of the Human Mind in History." 1. The Thesis.
- May 11. Professor William Leonard Schwartz, an illustrated lecture, "The Eruption of Sakurajima, January 10, 1914."
- May 20. The Stanford Music Club, a concert.
- May 25. Rev. Richard Roberts, a lecture, "The Background of Labor Unrest."
- June 1. Mrs. Albert G. Lang, pianist; Miss Janet Brandenstein, pianist; Mr. Nathan Firestone, violinist, a recital.
- June 29. Dr. Tom Peete Cross, Professor of Celtic in the University of Chicago, a lecture, "The Sinn Fein Movement and Its Origins."
- July 6. Mrs. Marion Craig Wentworth, a reading, "The Sunken Bell" by Gerhart Hauptmann.
- July 13. Dr. William Ezra Lingelbach, Professor of History at the University of Pennsylvania, Lecturer at the University of California Summer Session; a lecture, "Some Tendencies in Present Day Democracy."
- July 20. Misses Constance and Peronne Arntzenius in "Folk Songs and Dances."
- July 27. Dr. Carl Patton, pastor of the First Congregational Church, Los Angeles, a lecture, "Is Civil Liberty in Danger in America?"
- August 3. Dr. Jessie H. Bancroft, an illustrated lecture, "Posture and the Work of the American Posture League."
- August 10. Mr. and Mrs. Warren D. Allen, vocal and piano recital.

August 17. Dr. Ralph Haswell Lutz, an address, "Personal Experiences in Berlin after the Signing of the Armistice."

August 24. Dr. James Wilford Garner, an address, "Our Foreign Policy and America's Duty."

SPECIAL LECTURES

Besides the addresses mentioned above, a number of special lectures have been given by visiting speakers under the auspices of various departments of the University.

December 11, 1919. William Allen White, an address, "A Reporter at the Peace Conference."

February 5, 1920. "The Heritage of France," a four-reel film showing France before, during and after the German Invasion. Brief addresses by Miss Margaret Eaglesfield, of the Committee for Devastated France, and Captain Henri F. Nègre, of the French High Commission.

March 2. Dr. Charles Upson Clark, of the American Academy in Rome, an illustrated lecture, "Roumanian Art and Architecture."

July 21. John A. Lomax, a lecture, "Songs of the Cowboys."

August 2. Dr. Jessie H. Bancroft, an address, "Health Ideals in Education."

MEMORIAL EXERCISES

A Roosevelt Memorial assembly was held on the evening of October 27th in the Memorial Church. Mr. Frank LeRoy King, president of the Student Body, presided. Addresses were given by Chancellor, Emeritus, David Starr Jordan, President Ray Lyman Wilbur, and Chaplain D. Charles Gardner.

In honor of the memory of American soldiers and especially those who lost their lives in the service, a special Memorial Day program was given in the Church on Sunday, May 30th, in place of the regular Sunday service. Verdi's Requiem was rendered by a large choir supported by thirty members of the San Francisco Symphony Orchestra, the rendition being under the direction of Mr. Warren D. Allen. The student body, grouped by classes, alumni, faculty, and the Board of Trustees, attended in a body. An impressive part of the service was the placing of wreaths in the chancel by the presidents of each of the four classes, of the Alumni Association, the University, and the Board of Trustees.

FOUNDERS' DAY

The observance of Founders' Day was confined to a special assembly. The address was given by the Honorable William Kent. Attendance was somewhat better at this assembly than in former years, when the day was made a holiday and a special program was provided. Some members of the University protested against so slight a recognition of the occasion. The criticism was anticipated and desired. In fact, the Committee was disappointed that the protest was not more vigorous and general. It is depressing to reflect that, with the possible exception of the earliest years of the University, efforts to celebrate the day by declaring it a holiday and arranging appropriate exercises have met with but indifferent and half-

hearted response from faculty and students, though it is encouraging to note that alumni meetings and dinners arranged in recent years for the evening of Founders' Day have been well attended and enjoyable gatherings. If Founders' Day is to be thought of merely as a day of freedom from university work and as affording an opportunity for one o'clock dances, automobile trips, and picnics in the hills, there is little reason for declaring it a holiday. The significance and purpose of the day are ignored, nor are the best interests of the University served in such ways. When Founders' Day is recognized as an occasion when the University, its members and friends, may join in celebrating the founding of the University and in honoring the memory of the founders in a spirit of loyalty to the institution and its ideals and of appreciation of its privileges, then there will be good cause for considering the day a holiday. A consistent, respectful and whole-hearted celebration of Founders' Day will help to make it what it ought to be—a distinctive Stanford day, a cherished tradition of the University.

THE WEST LECTURES

The sixth series of the Raymond F. West Memorial Lectures on Immortality, Human Conduct and Human Destiny, was delivered by Dr. Henry Osborn Taylor of New York City on the evenings of May 4th, 5th and 6th in the Little Theatre. The general subject of the series was "The Freedom of the Human Mind in History." The topics of the three lectures were (1) The Thesis, (2) Contributions of the Peoples, (3) Later Phases; Bearings of the Theme upon our Present Problems. These scholarly and carefully prepared discussions were a notable contribution to the collection of addresses previously given under the lectureship.

COMMENCEMENT

The twenty-eighth annual commencement exercises were held in the Memorial Church on Monday, June 21st. Addresses were made by Rabbi Stephen S. Wise of the Free Synagogue, New York City, and by President Ray Lyman Wilbur.

DEBATING

A detailed statement of debating activities has been prepared for the University Register for the current year.

DRAMATICS

The Committee notes with satisfaction the organization of the dramatic interests of the University under the supervision of a regularly appointed instructor in dramatics. By placing the general control of dramatic productions in the hands of a committee made up of members representing the various classes and organizations regularly giving plays, with the coach as chairman, it is confidently hoped that the matter of play production at the University will be simplified, rendered less expen-

sive, managed in a more businesslike and less commercial manner and that the character and performance of plays will merit the unqualified encouragement and support of the university community.

LEE EMERSON BASSETT,
Chairman.

PUBLIC HEALTH

The members of the Public Health Committee for the year 1919-20, were John Pearce Mitchell, Miss Harriet Bradford, Dr. Alfred David Browne, Miss Helen Masters Bunting, and John Ezra McDowell. Of these, Mr. Mitchell, Miss Bradford, and Dr. Browne were also members of the Board of Directors of the Students' Guild.

The work of the Committee during the year was entirely of routine character, and dealt chiefly with the enforcement of the University vaccination requirement.

The Students' Guild experienced a very expensive year, due to general economic conditions, and to the need of keeping the Isolation Hospital open for a longer period than usual in order to care for a rather protracted series of light cases of mumps and measles.

JOHN PEARCE MITCHELL,
Chairman.

SCHOLARSHIP

During the year Dr. Charles Henry Gilbert resigned the Chairmanship of the Committee in order to be able to devote himself more fully to research. Dr. Gilbert had served the University as chairman of this Committee for twenty-two years. The Committee wishes to express its appreciation of his able, impartial and consistent leadership during the period when our scholastic standards were being formed.

At a meeting of the Academic Council on the 18th of June the Committee was empowered, subject to revision by the Council, to formulate rules defining when sub-standard work shall result in probation, when in failure and when in disqualification. The chief purpose of this action was to authorize the Committee to devise and put into operation an automatic system. It was intended that this system should embody the standards which the Committee had developed during its past experience and it was hoped that it would function with less expenditure of time on the part of Committee members. The time seemed ripe for summing up the accomplishment of the past in this more permanent form.

Such a plan for automatic action has been formulated by the Committee and has been in operation for nearly two quarters. The general purposes embodied in this plan are: (a) to constantly consider the quality as well as the quantity of work done in determining Committee actions, (b) to

exercise comparative leniency toward students during their first two quarters in the University while they are adjusting themselves to new requirements, (c) to bring about the withdrawal from the University of any student whose work does not justify the expectation that he will graduate at the end of at most five years of residence, except in those cases where special reasons have interfered with normal work, (d) to require a reasonable accomplishment each quarter from every student, even though his past record may be so good as to exempt him from action under the principle of clause (c) above, and thus to prevent neglect of work in reliance upon such a record.

It has seemed thus far to justify expectations. Among the advantages accruing may be mentioned: (a) the economy of the Committee's time, (b) the removal from the minds of the students of the feeling that Committee actions are personal and discretionary, (c) the possibility, on the part of the student, of knowing where he stands with regard to future Committee action, (d) the avoidance of a change of standard without conscious consideration of the matter by the Committee.

During the year the number of scholarships open to students of the University has been much enlarged. Some of the new scholarships have been established by the University; others have resulted from gifts for this purpose. They fall into several classes.

Most of them carry pecuniary stipends and are administered by the Committee on Scholarship. These are awarded only to students who have maintained high scholastic records and who also need the assistance. Among these are the thirty new graduate scholarships established by the University.

Others carry pecuniary stipends while the holders are selected by particular departments or by the donors of the scholarships.

During the year a number of tuition scholarships were donated to the University. These were not permanently established. The names of the donors are found in the List of Gifts to the University which is a part of the President's Report. They served a very useful purpose.

Finally, the Board of Trustees established fifteen Stanford Scholarships, without stipend. These are awarded by the Committee without regard to need and entirely upon the basis of high scholastic attainment.

PECUNIARY SCHOLARSHIPS ADMINISTERED BY THE COMMITTEE

NAME	Established	Amount	Holder, 1919-20
Leland Stanford Junior Memorial.....	1900	\$300	L. G. Gianini
W. J. Dickey.....	1914	300	P. F. Erickson
W. J. Dickey.....	1914	300	S. Furui
Brodie G. Higley ('99).....	1915	150	C. C. Bunds
Bertha Hyde Braly.....	1916	250	Mary E. Hewitt
Mrs. J. E. McDowell Roble Club.....	1916	150	Helen R. Becker
George E. Crothers Law School.....	1917	200	H. H. Hoss
Wilmer J. Gross.....	1919	150	F. E. Supple
Gertrude Gardiner.....	1919	200	D. T. Lundquist
Marcelle Henriette Rouiller.....	1919	160	Ruth Nethercut
Dorothy Metz ('17).....	1920	200	Theodora Emerson
Ernest A. Love ('18).....	1920	150	Marjorie F. Wells
Ira S. Lillick.....	1920	500	J. R. Henderson
Mrs. Ira S. Lillick.....	1920	500	Beginning Fall Quarter, 1920
University Graduate.....	1920	200 each	Beginning Fall Quarter, 1920
			See holders listed below.

There are thirty of these University graduate scholarships. These scholarships were held for one or more quarters of the year 1919-20 by the following students:

Anthony, A. B.	George, J. M.	Perry, Edna E.
Barber, W. R.	Goldstein, J.	Preston, Mary I.
Boekel, W. A.	Hampton, H. C.	Reilly, H. B.
Chappelaer, M.	Heron, I. C.	Shepherd, H.
Chase, Jessie M.	Howard, Clara E.	Smith, A. M.
von Christerson, S.	Hwang, P.	Smith, H. P.
Cloud, G. H.	Jefferson, E. M.	Sweeney, J. P.
Condee, N.	Johnston, F. R.	Van Norman, Louina M.
Cottrell, C. C.	Lambert, G. S.	Wedel, Sylvia C.
Crowe, H. E.	Laros, G.	Wells, C. F.
Dodson, Ellen M.	Morgan, T. H.	Wheeler, O. P.
Eiskamp, Marguerite	Paxton, Jessie K.	Williams, P. S.
Footman, Gladys B.	Pehrson, E. W.	

PECUNIARY SCHOLARSHIPS NOT ADMINISTERED BY THE COMMITTEE

NAME	Established	Amount	Holder, 1919-20
Alumni Jordan.....	1912	150	T. R. Haig
Alumni Jordan.....	1912	150	L. R. Thompson
John Maxson Stillman in Chemistry..	1917	150	A. C. Richardson
Cyril F. Elwell ('07).....	1918	300*	H. J. Rathbun
William Irvin Weaver.....	1919	150	F. W. Bergstrom
			N. P. Moore
Hiram C. Fisk ('10).....	1920	180	Beginning Fall Quarter, 1920
Treat.....	1920	120	Louise Cannon

*For 1920-21 stipend increased to \$500.

STANFORD SCHOLARSHIPS, AWARDED SOLELY ON THE BASIS OF HIGH
SCHOLASTIC ATTAINMENTS

In the spring quarter these were awarded for the first time. Graduate students and those eligible to receive Phi Beta Kappa during the year were excluded. The following students were selected:

Chase, Mary K. (Economics)	Kelley, Kenneth K. (Chemistry)
Dale, Helen L. (Botany)	Lowers, Virginia B. (History)
Elfvig, Isabel D. (French)	Rosenblatt, Millard S. (Physiology)
Gilbert, James C. (Geology)	Spilman, Elizabeth B. (Economics)
Glenn, Charlotte M. (French)	Trist, Marian A. (French)
Goodman, Daniel L. (Economics)	Vaughn, Samuel E. (Mech. Eng'g)
Haley, Bernard F. (Economics)	Whittier, Florence O. (Chemistry)
Jacobsen, Lydik S. (Mech. Eng'g)	

The following table indicates the status and use during the year of the various loan funds.

NAME	Endow- ment Aug. 31, 1919	Amount Available Aug. 31, 1919	Loans Repaid	Additions to Funds	Loans Made	Number of Loans
Associated Students.....	\$ 250.00	\$ 00.00	\$ 75.00	\$	\$	
Wm. Burton Barber.....	6,569.80	5,757.80	1,130.00	5.00	4,270.00	65
Horace Davis.....	10,000.00	400.82	100.00	426.00	300.00	3
Harker Alumnae.....	225.00	125.00	100.00			
Alumni Association						
Graduate Fund.....	245.00	30.00				
Alumni Assoc. Under- graduate Fund.....	500.00	200.00	100.00	20.00		
Class of 1906.....	100.00	00.00				
Women Students.....	1,432.88	209.68	602.91	20.00	580.00	16
	\$19,322.68	\$6,723.30	\$2,107.91	\$471.00	\$5,150.00	84

The loan fund for women students is administered by the Dean of Women. The other loan funds are administered by the Dean of Men under the general supervision of the Committee.

The following tables disclose certain phases of the scholarship of the student body for the current year:

DISABILITIES INCURRED BY STUDENTS
TABULATED ACCORDING TO THE CHARACTER OF THE DISABILITY

	Autumn	Winter	Spring	Summer	Total
Disqualification.....	68	40	45	5	158
Failure.....	132	93	35	11	271
Probation.....	127	117	169	40	453
Total.....	327	250	249	56	882

It should be noticed that in many cases the same student incurs two or three disabilities during the year; the table, therefore, does not indicate that 882 different students have been deficient.

DISABILITIES INCURRED BY STUDENTS
TABULATED ACCORDING TO RESIDENCE

WOMEN	AUTUMN		WINTER		SPRING		SUMMER	
	Number in Group	Per cent Deficient	Number in Group	Per cent Deficient	Number in Group	Per cent Deficient	Number in Group	Per cent Deficient
University Residence Hall; Roble..	193	5.18	175	4.00	176	5.68	76	6.57
Sororities.....	254	4.33	225	3.11	218	3.21	27	7.40
Homes and Approved Houses; local.....	109	5.50	97	1.03	86	1.16	45	6.06
Homes and Approved Houses; Commuters.....	28	0.00	25	0.00	30	3.33	34	2.94
Total Women.....	584	4.62	522	2.80	510	3.72	182	6.04
MEN								
University Residence Halls; Encina, Sequoia.....	679	13.69	666	14.26	610	12.45	112	8.03
Fraternities.....	613	17.45	578	14.01	520	18.47	102	9.80
Clubs.....	30	30.00	27	18.5	26	15.38	7	14.00
Other Locally Resident Students....	335	13.43	315	13.96	279	16.84	190	10.00
Commuters.....	141	14.18	121	10.00	125	9.60	43	4.60
Total Men.....	1798	15.23	1707	13.82	1560	14.60	454	9.03
Total University.....	2382	10.95	2229	11.20	2070	11.99	636	8.17

In the above table disqualifications, failures and probations are all included as disabilities incurred. In the similar tables previously published only the first two were included. The increased percentage of deficiencies does not, therefore, indicate a lowering of scholarship.

COMPARATIVE SCHOLARSHIP STATISTICS OF UNDERGRADUATE STUDENTS
FOR THE YEAR 1919-20

GENERAL AVERAGES	Year	Autumn Quarter	Winter Quarter	Spring Quarter
University.....	1.56	1.44	1.53	1.57
Women.....	1.73	1.65	1.76	1.80
Men.....	1.29	1.24	1.30	1.34
Non-Sorority.....	1.78	1.72	1.81	1.85
Sorority.....	1.68	1.61	1.71	1.76
Non-Fraternity.....	1.35	1.30	1.33	1.43
Fraternity.....	1.24	1.19	1.27	1.26

CLASSIFIED BY RESIDENCE—WOMEN

UNIVERSITY RESIDENCE HALL

RANK		RANK WITHIN GROUP					AVERAGE GRADE POINTS PER GROUP			
		Year	Autumn Quarter	Winter Quarter	Spring Quarter		Year	Autumn Quarter	Winter Quarter	Spring Quarter
14	Roble.....						1.73	1.67	1.73	1.80

SORORITIES

3	Alpha Phi.....	1	1	1	2	1.94	1.88	2.00	1.93
11	Delta Gamma.....	2	5	3	3	1.76	1.59	1.80	1.90
13	Gamma Phi Beta.....	3	2	5	6	1.75	1.77	1.74	1.73
15	Sigma Kappa.....	4	3	7	4	1.73	1.75	1.69	1.75
17	Kappa Alpha Theta.....	5	4	6	7	1.68	1.64	1.72	1.71
20	Pi Beta Phi.....	6	9	4	8	1.64	1.51	1.75	1.66
22	Kappa Kappa Gamma.....	7	8	8	9	1.62	1.53	1.68	1.66
23	Delta Delta Delta.....	8	7	10	1	1.62	1.58	1.41	1.93
25	Chi Omega.....	9	6	9	10	1.58	1.58	1.52	1.64
27	Alpha Omicron Pi.....	10	10	2	5	1.56	1.28	1.81	1.73

OTHER LOCALLY RESIDENT STUDENTS—HOMES AND APPROVED HOUSES

7	On the Campus.....	1	1	2	1	1.85	1.82	1.80	1.98
10	Palo Alto and Mayfield.....	2	2	1	2	1.76	1.67	1.82	1.82

COMMUTERS—HOMES AND APPROVED HOUSES

9	San Francisco, San Jose, etc.....					1.81	1.74	1.88	1.81
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CLASSIFIED BY RESIDENCE—MEN

UNIVERSITY RESIDENCE HALLS

33	Encina.....	1	1	1	1	1.44	1.37	1.48	1.5
39	Sequoia.....	2	2	2	2	1.40	1.29	1.48	1.47

FRATERNITIES

31	Chi Psi.....	1	1	6	5	1.48	1.63	1.38	1.42
43	Theta Chi.....	2	2	1	10	1.39	1.37	1.49	1.30
47	Alpha Delta Phi.....	3	4	4	12	1.36	1.34	1.44	1.28
51	Phi Kappa Sigma.....	4	3	14	1	1.35	1.37	1.22	1.49
52	Alpha Sigma Phi.....	5	8	5	7	1.35	1.29	1.38	1.37
54	Alpha Tau Omega.....	6	9	2	13	1.33	1.28	1.49	1.21
55	Sigma Nu.....	7	6	12	11	1.32	1.33	1.28	1.30
56	Phi Delta Theta.....	8	7	18	2	1.31	1.31	1.18	1.47
57	Delta Tau Delta.....	9	16	3	6	1.31	1.09	1.45	1.40
58	Theta Xi.....	10	11	9	8	1.30	1.22	1.33	1.37
60	Kappa Alpha.....	11	10	15	3	1.28	1.27	1.21	1.44
61	Delta Chi.....	12	5	11	14	1.27	1.33	1.28	1.21
62	Beta Theta Pi.....	13	15	8	9	1.27	1.10	1.35	1.37
65	Delta Upsilon.....	14	14	19	15	1.17	1.14	1.17	1.20
66	Kappa Sigma.....	15	21	16	4	1.17	.95	1.19	1.44
67	Delta Kappa Epsilon.....	16	20	7	17	1.17	.98	1.38	1.17
69	Sigma Alpha Epsilon.....	17	12	20	16	1.15	1.18	1.09	1.20
71	Phi Gamma Delta.....	18	17	17	20	1.12	1.08	1.19	1.08
72	Theta Delta Chi.....	19	19	13	19	1.11	.98	1.27	1.12
74	Phi Kappa Psi.....	20	18	10	22	1.07	1.04	1.30	.87
75	Sigma Chi.....	21	13	21	21	1.04	1.17	1.05	.87
77	Zeta Psi.....	22	22	22	18	.98	.87	.93	1.15

CLUBS

40	Japanese Students' Association.....	1	1	1	1	1.40	1.34	1.34	1.51
76	Chinese Club.....	2	2	2	2	1.01	.97	.95	1.13

OTHER LOCALLY RESIDENT STUDENTS

35	Palo Alto and Mayfield.....	1	1	1	1	1.43	1.35	1.43	1.55
42	On the Campus.....	2	2	2	2	1.39	1.55	1.30	1.34

COMMUTERS

50	San Francisco, San Jose, etc.....					1.35	1.26	1.33	1.50
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STUDENT ORGANIZATIONS
HONOR AND PROFESSIONAL SOCIETIES

1	Phi Beta Kappa.....	1	1	1	1	2.39	2.46	2.34	2.36
2	Iota Sigma Pi (Women—Chem.)	2	2	2	2	2.15	1.99	2.12	2.36
5	French Club.....	3	4	7	3	1.89	1.87	1.88	1.92
6	Spanish Club.....	4	5	4	4	1.86	1.78	1.93	1.87
8	Theta Sigma Phi (W.—Journ.).....	5	6	6	5	1.83	1.74	1.90	1.82
18	Phi Alpha Delta (Law).....	6	3	9	12	1.68	1.89	1.56	1.46
19	English Club.....	7	13	5	6	1.68	1.28	1.90	1.80
21	Phi Lambda Upsilon(Men—Chem.)	8	7	3	7	1.64	1.73	1.93	1.75
26	Mech. Eng. Soc.....	9	10	8	9	1.57	1.42	1.73	1.54
32	Alpha Chi Sigma (Men—Chem.)..	10	9	13	8	1.48	1.49	1.33	1.61
37	Phi Delta Phi (Law).....	11	12	10	11	1.42	1.34	1.45	1.46
38	Geology and Mining.....	12	11	11	10	1.41	1.39	1.36	1.51
59	Sigma Delta Chi (Men—Journ.)....	13	8	12	13	1.29	1.65	1.34	1.43

DEBATING SOCIETIES

16	Delta Sigma Rho (Men).....	1	1	3	3	1.72	1.99	1.43	1.59
24	Euphronia (Men).....	2	2	1	1	1.59	1.61	1.52	1.81
34	Nestoria (Men).....	3	3	2	2	1.44	1.28	1.44	1.60

DRAMATIC CLUBS

29	Ram's Head (Men).....	1	1	1	1	1.56	2.05	1.40	1.67
49	Sword and Sandals (Men).....	2	2	2	2	1.36	1.75	1.35	1.50

MUSICAL ORGANIZATIONS

12	Schubert Club (Women).....	1	1	1	1	1.76	1.66	1.82	1.82
36	Stanford Music Club.....	2	2	3	2	1.43	1.44	1.37	1.49
45	Stanford Band.....	3	3	2	3	1.38	1.34	1.42	1.38

PUBLICATIONS

28	Daily Palo Alto.....	1	1	2	1	1.55	1.55	1.53	1.62
30	Press Club (Men).....	2	2	1	2	1.54	1.51	1.58	1.55
44	Chaparral.....	3	4	3	3	1.39	1.29	1.47	1.45
48	1921 Quad.....	4	3	4	4	1.36	1.34	1.40	1.35

ATHLETIC TEAMS

41	Freshman Basketball.....	1	3	4	1	1.40	1.27	1.28	1.65
46	Varsity Basketball.....	2	1	2	2	1.38	1.43	1.34	1.37
53	Varsity Baseball.....	3	2	1	5	1.34	1.29	1.41	1.29
64	Varsity Track.....	4	5	3	7	1.18	1.12	1.30	1.11
68	Varsity Football.....	5	4	6	3	1.16	1.17	1.04	1.31
70	Freshman Football.....	6	6	5	4	1.13	1.07	1.05	1.30
73	Freshman Track.....	7	7	7	6	1.09	.93	1.01	1.28

STUDENT HONOR SOCIETIES

4	Cap and Gown (Women).....	1	1	1	1	1.93	1.90	1.92	1.96
63	Quadrangle (Men).....	2	2	2	2	1.19	1.23	1.26	1.04
69	Skull and Snakes (Men).....	3	3	3	3	1.16	1.21	1.24	1.00

This table is in slightly different form from those previously published. The figures at the left of the page under "Rank" indicate the position of the particular group or organization in the entire list, as determined by its average scholarship for the year. A reference to these figures discloses: (a) that students residing in the University residence halls excel most of the fraternity and sorority groups, (b) that the sorority with the lowest record outranks the fraternity with the highest record, (c) that the fraternities crowd the lower half of the list, (d) that students residing elsewhere than in halls, sorority or fraternity houses maintain their scholarship with reasonable success. As usual the women excel the men.

CLARKE BUTLER WHITTIER,
Chairman.

STUDENT AFFAIRS

During the past year the Committee has consisted of Professors Robert Eckles Swain, John S. P. Tatlock, Victor J. West, Murray Shipley Wildman and Marion Rice Kirkwood.

During the summer of 1919 the Committee made a careful revision of the University regulations relating to student conduct. These regulations may be most conveniently found in the handbook published last spring by the Organized Women Students. Since that time one modification has been made upon the recommendation of both the men's and women's student governments—Sunday having been added to the dates closed to social and dramatic activities.

The fall quarter witnessed a return to student control by the men. A new constitution drawn up by them was approved by the President and control was assumed by the Student Council upon the basis of the existing University regulations. The legislative functions of the Committee are now, therefore, vested in this Council and in the Women's Student Conference acting for the men and women students, respectively. Under present arrangements both student governing bodies make their recommendations directly to the President rather than through the Committee as formerly. The Committee consequently acts only in an advisory capacity to the President. The details of the new scheme of government for the men will be found in the report of the Dean of Men.

In order to clarify their relation to the University authorities for the benefit of the student body at large, and more particularly, for the assistance of succeeding councils and conferences, the Organized Women Students asked that a formal delegation of authority be made to them setting forth definitely the conditions upon which they are to act. In compliance with this request and with the cooperation of the Dean of Women, the Chairman of this Committee formulated an agreement between the President and the Organized Women Students, which was approved and signed. A copy of this agreement will also be found in the handbook referred to above.

Following somewhat similar action by the Committee of 1918-19, a recommendation has been made to the President suggesting a change in the duties of the Committee and of the Deans. In brief, it is recommended that the determination of University policy and the formulation of the regulations affecting student conduct continue to be the duty of the Committee, but that the enforcement of these regulations, including the administration of discipline in individual cases, be vested in the Deans. The thought underlying this recommendation is that the details of the task last mentioned are more properly within the province of an administrative officer than of a committee of faculty men whose chief function is that of instruction. Experience has shown that the exercise of this function by faculty committees has resulted more than once in serious interference with class room duties. Under the existing situation where the disciplinary function is primarily vested in the student governing bodies it is the practice for the Deans and the Committee to advise the President in just the manner suggested above. Should this practice prove the division of responsibility to be advantageous, it is hoped that it will be formally incorporated into the Articles of Organization.

Other than as above mentioned the work of the Committee during the year has been routine in character.

MARION RICE KIRKWOOD,
Chairman.

VOCATIONAL GUIDANCE

The membership of the committee for the year 1919-20 was as follows: Joseph Grant Brown, chairman, Miss Harriet Bradford, John C. L. Fish, Charles Andrews Huston, Mrs. Elizabeth B. Snell, and Victor J. West.

The committee has undertaken the consultation with individual students who have expressed a desire for assistance either in the choice of a vocation or in the arrangement of a course of study preparatory for some vocation. The results seem to be worth while.

The bulletin of Vocational Information has been distributed to students in the University and to prospective students. A considerable demand for the bulletin from the high schools has also been met. A great many favorable comments on the bulletin have been received.

The annual Conference on Professional Opportunities for Women was held in the Women's Club House on May 22, 1920. The following program was arranged:

Store Service:—Mrs. Lucinda W. Prince, head of Prince School of Store Service, Boston, Massachusetts.

Teaching:—Miss Anna Graeme Fraser, Stanford '00, Vice-Principal of the Oakland High School.

Immigration Work:—"Public Education and the Immigrant."—Miss Ethel Richardson; State Commission on Immigration and Housing; Assistant Superintendent of Public Instruction in charge of Americanization work.

Journalism:—Mrs. Hazel Pedlar Faulkner, Stanford '06. Publicity director; formerly with the San Francisco Examiner.

Physical Education:—Miss Signe Hagelthorne; Superintendent of Physical Education in San Francisco Public Schools.

Nursing:—A Profession for College Women.—Miss Clara Elizabeth Hogue, Stanford '01, Superintendent of Nurses, Stanford University Hospitals, San Francisco.

Medical Chemistry and Public Health Laboratory Work:—Dr. Ruby Cunningham, formerly with State Hygiene Laboratory; Physician for Women, University of California.

JOSEPH GRANT BROWN,
Chairman.

APPENDIX IV.

ADMINISTRATIVE REPORTS

LIBRARIAN

GROWTH OF THE LIBRARY

During the year 9642 volumes were added to the library.

A detailed statement of accessions follows:

Stanford University—

Volumes in library September 1, 1919.....	263,720
Added by purchase	3,949
Added by gift and exchange.....	2,213
Added by binding	1,992
Total volumes added.....	8,154
Less volumes withdrawn.....	189

Net increase 7,965

Volumes in library August 31, 1920..... 271,685

Lane Medical Library—

Volumes in library September 1, 1919.....	46,510
Added by purchase	607
Added by gift and exchange.....	295
Added by binding	775

Total volumes added..... 1,677

Volumes in library August 31, 1920..... 48,187

Total volumes in University Library, August 31, 1920..... 319,872

The above statement of accessions includes 783 volumes added to the Law Library, making a total of 23,360 volumes now belonging to that collection.

It will be noted that the number of volumes added by purchase this year falls far below normal. This is largely due to the fact that part of the money allotted to the general fund was reserved for Mr. Clark's purchases abroad, and few of these books have as yet been received.

The following is a list of some of the more important purchases of the year:

Annals of psychological science, vol. 1-9, pt. 3. 1905-10.

Asiatic society of Bengal. Proceedings, 1865-1904. 20v.

Boston news letter. Photographic reproduction of the period 1704-1708.

Edinburgh literary journal. Nov. 1828-Dec. 1831.

North West Territories, Canada. Legislative Council. Journals, vols. 1-19 in 6 vols. 1888-1904.

Odom, W. M. History of Italian furniture. Garden City, N. J., 1918-1919. Palæographical society, London. Facsimiles of manuscripts and inscriptions, Series 1-2. 1873-94.
 Panzer. Annales typographici. 11v.
 Royal physical society of Edinburgh. Proceedings, v. 1-19, 1854/58-1912/15.

Among the gifts of the year mention should be made of a bound set of the Semicentennial publications of the University of California; twenty-five volumes of German literature from Miss Canfield; the Journals of Washington Irving, in three volumes, presented by Mrs. Seligman, and the Works of D. Marcial Martinez, from his daughter. A large amount of material has been given by Chancellor Emeritus David Starr Jordan, including manuscripts of Mr. G. A. Clark on the fur seal fisheries investigations. Dr. Stillman presented to the library a collection of works on sugar. Gifts were also received from Professor Emeritus M. B. Anderson of a number of his works for the Stanford Collection; from Professor Krehbiel, Professor Ryan and Professor Rendtorff. Some valuable Mexican documents were received from Professor P. A. Martin. We are indebted to Dr. Casey A. Wood for a valuable collection of his works on ophthalmology, and to Mr. J. C. Cebrian for thirty-two volumes of Spanish literature.

EXPENDITURES

The expenditures for books, periodicals and binding, according to the bills approved and transmitted to the Comptroller for payment, are as follows:

Stanford University—

Books and periodicals:

On account Jewel fund	\$13,550.06
On account Law fees	3,677.32
On account Syllabus fees	702.74
On account T. W. Stanford Psychic literature and fund.....	13.25

Binding	4,996.09
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Lane Medical Library—

Books and periodicals:

On account L. C. Lane and other funds.....	\$ 4,585.18
On account Barkan fund	331.54
On account Gibbons fund	60.36

Binding	1,798.96
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Total	\$29,715.50
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It will be noted that the amount spent for binding is unusually large. This is due to the increased cost of binding. We have tried to economize by changing many of our bindings from leather to cloth. But in spite of our efforts in this direction, the outlay for binding this year was much in excess of the sum spent for that purpose in former years. The figures appended show the rise in the cost of binding in the course of three years:

Year	No. of Vols. Bound	Total Cost	Cost Per Volume
1917-18.....	2285	\$2,812.04	\$1.23
1918-19.....	1420	1,831.00	1.29
1919-20.....	2120	4,996.09	2.35

CATALOGUE DIVISION

Miss Sutliff, chief cataloguer, submits the following summary of the work of her division. I feel like adding that this is a very creditable showing in light of the fact that the Catalogue Division has been short one cataloguer for about half of the year.

Number of volumes added to the shelf list and the catalogue:

New	11,054
Old	369
Continuations from bindery.....	825
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Recatalogued	12,248
U. S. documents.....	673
Unclassed theses	2,189 titles
	<hr/>
	560

Number of cards prepared for catalogue:

Typed cards	33,417
Typed reference cards.....	4,000
L. C. cards.....	15,354
A. L. A. cards.....	50
	<hr/>
	52,821

Cards and slips for the Union catalogue:

L. C. slips.....	40,000
Harvard	8,000
Chicago	5,140
British Museum	14,345
	<hr/>
	67,485

Copy for 183 titles has been sent to the Library of Congress for printing.

REFERENCE DIVISION

(Extracts from Miss Hays' report.)

For a period in the early winter we suffered seriously from vandalism; pictures were hacked out of our bound volumes of art magazines in the reading room and from the current files in the periodical room, so that these were all eventually removed to the stacks, where they were given out on request. Newspapers have been cut also, and for these depredations there seems no recourse except to build up better feeling. The Daily Palo Alto has uttered some remonstrances, and the right attitude of students toward the library should be treated in any development of the honor system.

READING ROOM

The Reading room collection numbers by actual count 7225 volumes and has had its annual increment of about 200 new volumes and continuations. The Christmas inventory showed a loss of 9 new titles, making a total loss of 24 from the standing collection—not a bad record for a series of years.

The new book shelves have been very much used, and there have been practically no losses from these shelves.

HOPKINS ROOM

The Hopkins room has been much enjoyed. Whenever the room is straightened, the variety of books upon the table points to a wide range of readers and interest. There are no rules and the books are unmarked; there is no supervision of the room, and two exits, so that there is perhaps cause for congratulation in the fact that the total loss for the year is only 25.

STANFORD COLLECTION

The shelves of the Stanford collection were ready and the room placed in order for Commencement. The theses have been placed in the main stacks because of lack of space, but an author and subject catalogue are kept here. The alumni side has grown with some rapidity. In the spring, notices were sent out by the alumni secretary, asking the alumni for copies of their publications, or for notes of anything published. A very general response brought us many books and papers, and already over 500 cards have been added to the bibliography.

The value of the collection for the future is being enhanced by indexes, and we hope in time to locate any event or name in our past history with a minimum of labor.

The statistics of current mail show 3690 pamphlets, 668 college catalogues, and about 500 pamphlets, books, etc., for the Stanford collection. Of this, approximately 1500 pamphlets are kept at hand. The Reading room file represents the live material for present use.

PERIODICAL ROOM

There has been no important change in the routine of this division. The growing receipts of foreign mail have more than filled the time of the staff, both in checking and collating. Within the last three months, especially, much German mail has been received, filling in some of the gaps which occurred during the war period. The slip index of current magazine articles has continued to be a useful supplement to the Readers' Guide, and the making of selected lists of articles for the Daily Palo Alto was resumed during the spring quarter. The subscription list and record of special orders have been turned over to the Order division.

The statistics of the division show a total mail receipt of 27,708 pieces, 6858 of which were newspapers. The current checking list contains some 1266 titles.

PERSONNEL AND WORK

The year has been an almost ludicrous succession of shifts and changes, as we have endeavored to cover the open hours of the library in the Periodical and Reading Rooms. For the sake of the record, a list of the assistants for the year 1919-20 with the length of service is appended. (The list contains fifteen names. It may be remarked in this connection, that during the year the Loan desk used twenty-three people.)

A staff of six permanent people could administer this division most acceptably; with fewer than that, or with constant readjustments such as we have been obliged to make this year, we are at a continual disadvantage and on the defensive.

The annual list of Faculty publications was prepared in October. The debaters took the usual amount of time, and the average amount of answering out of town inquiries has been done. As a general tool, we succeeded in issuing a typed list of current periodical subscriptions, which is useful in spite of defects of physical makeup. As another tool, we keep a current slip index to popular magazines, bridging the gap between appearances of the Readers' Guide. These slips are roughly subject headed and filed by subject, and discarded when the printed index comes.

DOCUMENT DIVISION

The following report on the work of the Document division is submitted by Miss Minna Stillman, Document librarian.

This division was established in November, 1919, in order to consolidate the work of ordering and recording government publications, municipal, state, federal and foreign, with that of assisting the student in the use of them.

Most of this material is available free as long as the supply lasts, but if not requested promptly is exceedingly difficult to obtain. The staff of the division consists of the chief and one half-time assistant, who has been replaced frequently, so that the work of building up the collection has been largely confined to continuing and completing sets of federal and state documents already begun. The strength of the collection at present lies in its U. S. collection and in its set of British Parliamentary Papers, which are among the best in this country. Many U. S. documents come to us automatically as a depository library, but we have to apply for many others, such as hearings before congressional committees. In the past we have received very few of these, but this year with the cooperation of the members of Congress, especially the Hon. Hugh S. Hersman, we have received most of the important ones. Among state documents, those receiving special attention have been the reports on finance, labor, and public service and reports of special investigations. We have done very little during the year to build up our municipal or foreign collections, but through efforts made in the past, we are receiving parliamentary papers and debates of Great Britain and Canada, as well as some Canadian department publications. The Conservation Commission of Canada has, during the year, courteously completed our set of its publications.

The two fields that it seems most desirable to build up at once are Australia and South America, and we hope to undertake this work soon. There is no Australian document collection available on the Coast, and we are receiving currently only the commonwealth debates, and the debates and legislative documents of the state of South Australia. We have very little government literature from South America, and this material is constantly becoming more important, and the demand for it is increasing.

As few of the countries have central distributing agencies, or keep mailing lists, it requires much attention to keep the files complete.

During the ten months of its existence the division added to its collection 9000 federal, 2300 state and 1400 municipal and foreign documents.

In addition to building up the collection and recording it, the division has charge of shelving all the U. S. documents, the legislative documents of foreign governments and some of the state and municipal documents, principally those of a statistical or administrative nature. This material is circulated and handled by the division staff, and not through the central delivery desk.

A feature of the work which we are hoping to perfect in the next few years is the reference work, or assistance rendered to readers. One of the advantages of the consolidation of the work in one division is that the information gained incidentally in ordering and recording, is at the service of the public. At present the room is open only from 9 A. M. to 5 P. M., which puts the burden of supervision and assistance onto the staff of the Reference department for the rest of the day and the evening. In addition to lengthening the hours of service, we hope in the future to improve our reference tools, and install a card catalogue of the material under the supervision of the division, as the main catalogue is at an inconvenient distance, on an upper floor. More time for indexing reports and making records of changes in organization of government bureaus and the scope of their duties would also be very desirable, as all these aids render the division and its efficiency less dependent on the stability of the staff.

LOAN DIVISION

For a number of years the work of this division has been carried on by a staff of student assistants under the direction of the assistant librarian, who is head of the division. This arrangement has never been entirely satisfactory.

The loan desk staff performs two somewhat distinct functions. One is the work of putting books into the hands of readers. The university public is in daily contact with this end of the work. It is the service by which the staff is known and judged.

The other function is performed behind the scenes. It consists in the shelving of all books, the checking and general maintenance of stacks, reading rooms and seminar rooms and the checking of department libraries. It is obvious that if this end of the work is neglected, if our house is not kept in order, the service to the public will suffer. It is pertinent to point out here that our service has suffered for several years for this very reason. A complete inventory of library books has not been taken since the summer of 1917. On account of lack of assistants, we have not even been able to put in order all books on the shelves since we occupied the new building. This work of checking and putting books in order was formerly done during the long summer vacation, when the service end of our work was practically nil. Now that the university is in session eleven

months in the year, there is no free time in which to do the checking. It is quite possible to keep this work going throughout the year, but the staff we now have can do no more than take care of the service end of the work and shelve current accessions. I propose, therefore, Mr. President, to ask the librarian on his return from abroad for extra assistants to enable us to put our house in order. This work is so necessary that we cannot afford to delay it longer.

In the old building our service to the public was rendered over the loan desk. With the work concentrated at one point, it was possible for one man to supervise it and keep things moving. I may add that this was no easy task with a staff composed entirely of student assistants—persons whose primary interest is necessarily in something other than the work in hand. The grade of service we were able to render was attained only by virtue of painstaking care in training new men and in eternal vigilance in following up their work day by day. The staff at that time usually numbered six or seven student assistants. We could figure on “breaking in” about half that number yearly.

Our occupancy of the new building brought a much more complicated service problem. We have now three fronts to maintain instead of one—the reserved book room and the seminar library in addition to the loan desk. To man these additional points we have more student assistants. During the autumn, winter, and spring quarters we maintained a staff of eleven student assistants. We had seven in the summer quarter. To keep this staff at full strength for the year, we were forced to employ twenty-three people, eleven of whom had had no previous experience. Good service can not be expected from such a staff. It is quite probable that a higher level of service could have been maintained had the head of the division been able to give his time and attention to drilling the recruits. (As you know, the duties that have fallen upon my shoulders as acting librarian have consumed no small part of my time since the departure of Mr. Clark early in January.) Even were it possible to render some sort of decent service in this way, it is questionable whether it is either economical or wise. For my own part, I am convinced that it is neither. I propose, therefore, in the very near future to recommend to the librarian that two or three full time assistants, not students, be added to the staff of this division. These two or three people would form a nucleus for our staff, and would make it possible for us to develop a more uniform and satisfactory service.

The reserved book room represents a new departure for this library. At the end of a year's use of it, it seems desirable to report on how it has worked. This room serves as a lower class reading room. In it books are placed on open shelves. Students choose their books from the section reserved for a particular course, read them in the room, and return them to the shelf at the end of the hour. This plan of handling syllabus reading has met with great favor among the faculty. Many men have requested that their references be placed in this room. Unfortunately the room is small. Early in the autumn quarter we discovered that every seat in the room was occupied at certain hours in the day, and some students were

unable to find a place to work. In order to avoid overcrowding in the room, we withdrew books reserved for certain courses and handled them at the loan desk. Each quarter we have been asked to place more books in the reserved book room than we can handle in that room. The demand for this sort of service makes it desirable to provide another room for it.

There is one drawback to the plan of placing books on open shelves. The books disappear at times when they are most needed. There were approximately 1500 books on the shelves in this room during the autumn, winter and spring quarters. The number of books missing from the reserve for each quarter is indicated below:

Autumn quarter	75
Winter quarter	112
Spring quarter	96

These books keep drifting in. At present the figures stand as follows:

Still missing from reserve for	
Autumn quarter	37
Winter quarter	35
Spring quarter	48

These figures give no idea of the number of books that were absent at a particular time when they were in demand. These disappearances for a short time were very frequent. They interfered seriously with the work of the room.

LANE MEDICAL LIBRARY

Lane Medical Library now has 68 regular and 50 life members. Twenty regular members were added during the year. Miss Ophüls reports that the attendance at the library during the year has been very satisfactory. The number of loans made was 9054.

PERIODICALS

During the year three periodical sets were completed, and forty-four new subscriptions added to the periodical list. Some of the most important German sets are now complete.

CATALOGUING

New books catalogued.....	817
Old books catalogued.....	109
Shelf list cards filed.....	760
Catalog cards filed.....	4,198

Current accessions, both by purchase and gift, have been catalogued to date.

STATUS OF LIBRARY STAFF

This report on the progress of the library would not be complete without mention of the recognition accorded to librarians by the following resolution passed by the Academic Council on April 23, 1920:

"That members of the Library Staff be given classification and such status on the Academic Staff as their salaries may justify."

In conclusion, Mr. President, I beg to express my gratitude for your support of my efforts as acting librarian, as well as for your patient hearing and your wise counsel.

LIBRARY STAFF

The Librarian, Mr. Clark, has been on sabbatical leave since January 1, 1920. He is devoting a part of his time to purchasing books for the library in the European market.

The Assistant Librarian attended the meeting of the American Library Association at Colorado Springs, early in June.

Miss Sutliff, Chief Cataloguer, read a paper on "Making the Library Safe for Democracy" before the California Library Association at Riverside in April. Miss Almond also attended this meeting.

The library staff comprised George Thomas Clark, librarian; Charles V. Park, assistant librarian, and acting librarian after January 1, 1920; Helen Binninger Sutliff, head of catalogue division; Alice Newman Hays, reference librarian; Elizabeth Hadden, head of order division; Minna Stillman, document librarian; Louise Ophüls, medical librarian; Thomas Lafayette Dyer, law librarian; Nina Almond, cataloguer; Florence M. Craig, cataloguer; Ruth Cary Crutcher, secretary; Johanna Dresel, assistant, Lane Medical Library; *Hildegard Flügel, cataloguer; Helen Avery Gale, assistant, serial division; *Gladys Green, assistant, serial division; *Louise W. Katz, cataloguer, Lane Medical Library; Edith Meers, assistant, serial division; Margaret Potter, cataloguer; Pearl Secker, cataloguer; *Mildred Smith, order division; Grace Elizabeth Stillson, typist; Hannah Lilian Todd, bindery; Florence L. Wickes, cataloguer, Lane Medical Library; *Lois May Woods, cataloguer, Lane Medical Library.

CHARLES V. PARK,
Acting Librarian.

DEAN OF MEN

During the year 1918-19 there was considerable agitation in undergraduate circles for the return of a men's student government, which had been withdrawn by the University authorities because of the disturbed conditions that existed during the war. No definite scheme was suggested nor was any progress made until during the summer quarter. Mr. F. Leroy King, the newly elected President of the Student Body, together with a small group of upperclassmen, drafted a proposal for a

* Persons so indicated resigned during the year. Miss Flügel became librarian of the Standard Oil Company in San Francisco. Miss Green gave up her full time position at the end of the autumn quarter, but continued to help us out as a part time assistant. Miss Katz has taken a position as cataloguer in the library of the University of Minnesota. Miss Smith is now librarian of the Stockton High School. Miss Woods accepted a position in the Richmond Public Library.

It may be pertinent to note in this connection that these people were all attracted elsewhere by better salaries than we were able to offer.

men's student government. This plan, with a few minor changes, accepted by the Student Body and approved by the President of the University, became effective December 1, 1919.

The constitution as adopted provides, first: "That the responsibility of the proper regard for all traditions and customs shall rest upon the Senior Class" and that the Senior Class "shall take measures to maintain a proper attitude among the students in such matters."

Second: "That the Men's Council of Student Control shall settle all cases of disciplinary nature in all matters pertaining to the male Student Body, and shall maintain a proper attitude among the students in such matters."

The constitution provides further that the Council shall investigate all cases of discipline and take action in the form of a recommendation direct to the President of the University for his sanction or disapproval.

Scarcely sufficient time has elapsed to judge of the success or failure of the new form of student government.

Due to graduation and withdrawals from the University an unusual number of changes have been necessary in the membership of the Council during the year. Fortunately, however, the Council has at all times been composed of a well selected and strong group of seniors who have faithfully and conscientiously performed their duties. The Council has acted promptly in all cases of discipline and has endeavored to create within the Student Body a higher standard of responsibility in all matters of conduct.

The real danger lies in student indifference and carelessness. No great interest or responsibility was apparent during the period of agitation for student control and when the plan was presented for approval only 397 votes were cast out of a total registration of 1824 men and of this number 20 were opposed to any form of student government.

This carelessness and indifference were particularly noticeable and flagrant in the case of the seniors who, in spite of repeated efforts by the Council, Student Body and Class officers, and others interested in the success of student government, failed to perform the duties prescribed in the constitution.

Toward the close of the year men active in student affairs who felt some concern regarding the future of student government realized the grave danger if this lethargy continued another year and there are at present indications that during 1920-21 the Senior Class will endeavor to carry out the provisions of the constitution.

The Men's Student Council held twenty-two meetings during the seven months, December to June, inclusive, and considered the following cases of misconduct.

No. of Students	OFFENSE	DISCIPLINE RECOMMENDED
1	Cheating.....	Denied social privileges for one quarter and loss of credit in course.
1	Cheating.....	Placed on probation.
2	Cheating.....	Suspension for remainder of quarter (six weeks).
1	Cheating.....	Suspension for two quarters.
1	Cheating.....	Loss of credit in course and placed on First Failure.
1	Cheating.....	Evidence insufficient to convict.
2	Flagrant disobedience of University regulations.....	Suspension for remainder of quarter (eight weeks).
1	Disobedience of University regulations.....	Evidence insufficient to convict.
1	Defacing University property.....	Reprimanded by Council.
1	Theft.....	Expelled from University.
3	Hazing.....	Suspension for remainder of quarter (seven weeks).
5	Hazing.....	Reprimanded by Council.
1	Hazing.....	Expelled from University.
2	Hazing.....	Suspension for two quarters.
2	Overcharging for football programs.....	Reprimanded by Student Council and required to refund money to Graduate Manager.
11	Disorderly conduct.....	Evidence insufficient to convict.

During October and November, before Student Control became effective, the Dean of Men considered the following cases of misconduct:

No. of Students	OFFENSE	DISCIPLINE RECOMMENDED
1	Cheating.....	Suspension for one quarter.
1	Cheating.....	Probation and loss of credit in course.

During the year the Dean of Men served as a member of the Public Health Committee and of the Committee on Registration, also as secretary to the Scholarship Committee and in addition held the positions of Academic Secretary and Alumni Secretary.

The work involved in these various positions was more than one person could accomplish and early in the year it became apparent that a reorganization of the work was necessary. Under date of January 20, 1920, the Dean of Men addressed the following letter to the President of the University:

President R. L. Wilbur,
Stanford University, Cal.

Dear President Wilbur:

After careful consideration I have decided to tender my resignation either as Dean of Men or as Alumni Secretary.

Two reasons prompt me to take this action:

First: the present condition of my health will not permit the prolonged and arduous work, twelve to fourteen hours each day, that has been required during the last three years.

Second: the work of both offices is constantly increasing and requires that separate positions be established.

During the two years of the war the alumni work was necessarily neglected. Since September, 1918, when I assumed the additional duties of Dean of Men, it has been impossible to devote time to alumni affairs. As a result the records are not in a satisfactory condition, and a considerable amount of labor and expense will be necessary to reorganize the office.

I am willing to continue in either position, but my strong preference is to devote to the alumni work my entire time except that required for continuing my duties as Academic Secretary.

Personally I believe that at present the position of Alumni Secretary offers a field of real service to Stanford, larger and more important even than that of Dean of Men.

I have served the University for almost twenty-four years, and during ten years of that period have, in addition to my other duties, performed the alumni work. Since neither salary nor relief from other occupation attached to the work, it has never been possible to do it justice, nor has the position been given the rank and recognition that I believe it should have in the University and among the alumni.

At the present time the office, if properly established, offers great possibilities; I believe that with my years of experience and my interest and enthusiasm in this work there will be a splendid opportunity to accomplish substantial results.

One important task to be immediately undertaken will be the publication of the new Alumni Directory and Ten Year Book. This will require several months of painstaking labor, especially if, as now planned, we secure data for both alumni and former students. Heretofore no effort has been made to keep in touch with our former students. My desire is to secure an amendment to the constitution of the Alumni Association that will make them eligible to associate membership in the Association, and with this in view it is highly desirable that their names, with complete biographical data, be included in the Alumni Directory.

Another piece of special work now on hand is the promoting of the collection of funds for the Stanford War Memorial.

Still another duty is to bring our alumni in closer touch with important University affairs. This can be accomplished only through personal visits to large alumni centers. Heretofore my work has not permitted me to be absent from the University for any length of time; only twice during my ten years of service as Alumni Secretary have I met with the Alumni clubs, and then only in California, Oregon, and Washington.

If this recommendation meets with your approval I shall be glad to be relieved of my position as Dean of Men at the end of the present quarter, but in case this is not convenient I shall willingly continue until the close of the present academic year, with the understanding that the proposed alumni work be postponed until my successor as Dean of Men has been appointed.

I wish to take this opportunity of expressing my appreciation of your confidence in appointing me Dean of Men. The work has been very enjoyable and I trust that I have, in a measure at least, made a success.

Very truly yours,

JOHN EZRA McDOWELL,
Dean of Men.

The recommendations contained in the above letter were approved by the President of the University with the understanding that the work of the Dean of Men's office might be discontinued at the close of the spring quarter. In March Mr. George B. Culver, '97, accepted the appointment of Dean of Men but, being unable to report for duty until the beginning of the next academic year, the routine work of the office was continued as usual for the balance of the year.

JOHN EZRA McDOWELL,
Dean of Men.

DEAN OF WOMEN

In addition to the work of the office, the Dean of Women has continued an instructor in the English Department, where she has carried three hours' teaching a week in English A.

The Dean of Women has served as usual on the Public Health Committee, the Board of Directors of the Students' Guild, the Board of Directors of the Stanford Women's Club House, the Committee on Vocational Guidance and on the newly formed Committee on Women's Athletics. She has also attended regularly, at the invitation of the Chairman, the meetings of the Committee on Lower Division Administration.

In her own office, the Dean of Women has been especially concerned with the following:

Residence Halls and Housing: Roble Hall has been filled to capacity as usual, and during the fall and winter quarters Alvarado Hall, administered as a University hall of residence, housed those who applied too late to be accommodated in Roble. In addition, the Dean of Women arranged with the management of Madrono Hall to accommodate on the third floor twelve graduate students at the same rate as that charged in Roble, and to board the students in Alvarado Hall.

The Dean of Women calls attention to the fact that the number of applicants for rooms in Roble Hall increases from year to year, since undergraduates who formerly commuted now prefer to live at Roble. The result is that it is now impossible to accommodate graduate students in Roble Hall. Madrono Hall offers at present the only other campus residence where room and board are provided and, except for isolated instances, there is no other opportunity to secure campus lodgings, the Kingscote Apartments being approved for unchaperoned students only in the case of older women, who are a minority in the graduate school. Furthermore, all these accommodations are considerably more expensive and less convenient than those at Roble, so that graduate students are already beginning to feel discriminated against, an attitude exactly opposite to the real welcome of the University for serious advanced students. In view of these considerations, the Dean of Women again urgently recommends that the University proceed at the earliest possible moment to carry out its housing policy by building additional residence halls for women students.

During the year, the Dean of Women has had opportunity to discuss with individuals and groups of students and alumnae the housing policy announced by the President during the autumn quarter, especially with reference to its ultimate effect upon the sorority house unit. There has been manifest throughout these discussions the desire to see developed a permanent plan for the ultimate solution of the University's housing problems. At the close of the year the Dean of Women remains convinced that the most desirable residence unit for women students is a hall to accommodate sixty to seventy students, as suggested in her report to the President for the year ending July 31, 1917. She would in this connection

call attention to the excellent possibility of achieving such a unit by utilizing the ground plan followed for Roble Hall, with a solid wall through the centre of the building and minor rearrangement of first floor rooms. Thus the exterior unity of the buildings would be maintained and the advantage continued of serving 150 persons from a common kitchen.

Such changes would produce on approximately the present ground plan two halls accommodating about 75 persons exclusive of matron, house-keeper and maids. In figuring the necessary return on investment, it would be well, if possible, to count out from five to ten rooms on the third floor of each hall to be reserved for returning alumnae and other guests. The importance of this suggestion lies in the fact that the University will wish and need to fill the place now assumed by the sorority houses as rallying points for alumnae reunions and general alumnae interest, since it is only a matter of time and tradition when the halls of residence will be the centre of the affections of great numbers of alumnae to whom the University will look for interest and support.

If such guest room provision were made, the residence halls would probably house students as follows:

Roble Hall	140
First new building—	
2 halls: 65 students each.....	130
Second new building—	
2 halls: 65 students each.....	130
	<hr/>
	400

Provision would thus be left for about ten guests per hall. These rooms could serve the additional purpose of quiet isolation for rest or for cases under observation by physicians, and for emergency housing accommodation at the beginning of each quarter, when students on the margin of the 500 limit are hopefully waiting for admission. It will be noted that the above figures take into account the fact that about 100 women students live at home.

In planning residence hall expansion the Dean of Women suggests that sufficient ground contiguous to that necessary for housing 500 women students be set aside in anticipation of the day when funds are available through special endowment to house and educate at Stanford at least 500 more women students.

Special Endowment for Additional Women Students: In the above connection it might also be pointed out that no University project should appeal more directly to the alumnae than securing the special endowment for women students announced as a need of the University by the President in 1919. Alumnae and former students, and their families and friends know from experience the peculiar difficulties under which the University labors on account of the "500 limit" and would no doubt be eager contributors and zealous spokesmen in a campaign for endowment to increase the number of women students.

Admission of Women Students: The Dean of Women has noted during the year that the difficulties surrounding the admission of women students increase as the waiting list grows longer, and she has given some attention to a possible change of method to govern the admission of women. She presents the following for consideration:

1. That only those freshmen candidates be placed on the Preferred List who, in addition to satisfactory high school credentials, shall have passed with a minimum of 75% the comprehensive examinations of the College Entrance Examination Board.

2. That any necessary selection among such successful candidates be based on grades, and that freshmen be preferred above transfers from other institutions.

The latter recommendation may seem to depart somewhat from the emphasis Stanford desires to place on advanced work, but it is advisedly made upon the basis of close observation of the Stanford women students for four years and upon what seems to the Dean of Women Stanford's unique place among co-educational universities in providing peculiar advantages for building character toward enlightened citizenship. The limitation of numbers, the residential student body and faculty, and the suburban location contribute toward a cohesion and mutual community interest which are essential to the best development of undergraduates independent for the first time of home influence. With the present complete emancipation of women such independence is most important for women students. For some women their college life is the one time in their existence when they have the experience of living among their fellows, bound by common interest but by no special relationship and responsibilities, and this experience is of inestimable value in developing in women a broader, deeper social sense. Through its plan for residence halls, Stanford offers signal opportunity for such development. It should therefore offer it to young women upon whom Stanford standards will be sufficiently impressed to persist and reflect back credit and support to the University. This impression can be best assured in a student body of the greatest continuity and least turn-over. Furthermore, for the younger women undergraduates of this State, Stanford can for the present fill a place such as can none of the universities or junior colleges whose housing capacity and policy and whose direct interest in student welfare are not yet equal to Stanford's. (In this connection see page 5 of the Report on the Reorganization of Undergraduate Instruction.)

3. That candidates for admission with advanced standing be placed on the Preferred List only after (1) fulfilling the requirements for freshmen for place on that list (namely creditably passing at 75% or over the comprehensive examinations of the College Entrance Examination Board), and (2) presenting a college record acceptable to the Committee on Admission, and further (3) that such candidates take second place to all freshmen candidates who have fulfilled requirements for the Preferred List.

Summer Quarter: Upon authorization from the President to follow the recommendation made in last year's report, all undergraduate women

students of the summer quarter, not living at home, were required to live in Roble Hall, which thus gave accommodations to eighty students, many of whom were graduates who preferred Roble Hall to other accommodations.

There is developing a function for the University to perform in extending through the quarter the hospitality introduced at the President's reception to summer quarter students. Of this hospitality the Dean of Women has not yet attempted her share. The matron of Roble Hall reports that several times during the quarter faculty guests were invited to dinner at the Hall so that the students had opportunity to meet Dr. and Mrs. Jordan and others. The matron states that the summer residents were thoroughly satisfied with their life at the University and with Roble Hall, those who had lived in dormitories elsewhere having remarked especially upon its homelike atmosphere.

Women's Self-Government: Each year the strength of women's student government increases. The Organized Women have conducted their government as usual through the Women's Student Council and the Conference. The year has been uneventful. There has been little or no increase in the strength of public opinion, so necessary to any good democratic government, but neither has there been a failure to maintain the responsibilities of government already developed. Only when the women students are free to unite their interests and work for a better community life, will they develop the necessary public opinion and *esprit de corps*, of which stable government will be the natural outgrowth.

Toward the end of the spring quarter plans were inaugurated for a Women's Festival to be held under the auspices of the Organized Women of Stanford University. The purpose of this festival is to draw together the women of the University in a common undertaking and is an expression of the attempt to emerge from the close-group activities into all-college activities for women students. As such the plan deserves the help and encouragement of all who are devoted to the practice of the democratic ideal at Stanford University.

Athletics: With the reorganization of the gymnasium and sports under new direction, a splendid beginning has been made toward stable athletic activity among the women students, whose further progress waits only upon the construction of permanent, well-equipped fields in the area set aside for that purpose. These fields are an immediate and imperative need, both as equipment and as the nucleus of future community life among Stanford women students.

Vocational Information: During the autumn and winter quarters each new woman student and each sophomore had a ten minute interview with the Dean of Women, the main purpose of which was to discover whether the students had in mind definite work for which they expected their University education to prepare them. The results were tabulated, and proved of such interest that similar information for Junior and Senior women was obtained by comparison of records.

UNDERCLASSMEN

Of the 111 freshmen interviewed, 45 desired a "general foundation" or a "liberal education;" 27 could state no vocation; 66 could state a vocation (teaching 21; secretarial 10; social service 10; business 8; journalism 8; laboratory work 4; music 2; nursing 1; library work 1; and production of dramas 1).

Of the 66 freshmen who could state a vocation, only one (nursing) requires one specific major department determined during the first year; 65 may prepare for their vocations in various departments; and all but 4 (laboratory work) should build on as broad a foundation as possible.

Of the 120 sophomores interviewed, 82 desired a "general foundation;" 79 of the 82 could state no vocation; 41 stated vocation (teaching 12; business 7; secretarial 6; journalism 6; laboratory work 3; medicine 3; library work 1; law 1; chemical engineering 1; and nursing 1.) Of the 41, 11 had changed their vocational plans and 13 had changed their major departments since last year's interview.

Of the 41 sophomores determined on vocations, only two (nursing; chemical engineering) require one specific major department determined in the first year; while 39 may prepare for their vocations in various major departments; and all but 3 (laboratory work) should build on as broad a foundation as possible.

On the whole, the sophomores after a year in the University had less definite vocational plans than the freshmen but were none the less determined to enter some useful occupation. Only three or four, of the 231 students interviewed, were wholly aimless or indifferent to vocational plans, but the majority saw no use in making an early decision based on inadequate information.

UPPERCLASSMEN

Juniors: Of the 76 Junior women, 6 are majors in subjects definitely vocational; 17 are majors in subjects with well-defined vocational possibilities; 52 are majors in subjects of the least possible restrictively vocational character.

Seniors: Of the 89 Seniors, 13 are majors in subjects definitely vocational; 8 are majors in subjects with well defined vocational possibilities; 69 are majors in subjects which have the least possible restrictively vocational character.

A safe estimate, from acquaintance with more than a majority of the above students, is that of the 121 whose major subjects are least vocational, at least 75 contemplate entering a useful paid occupation upon graduation and not more than 3 or 4 are wholly without intention of putting their education to some use. Such results and frequent discussion with students of their academic schedule lead the Dean of Women to look with confidence upon the reorganization of undergraduate instruction which has resulted in the formation of the Lower Division.

Student Employment: The Student Employment Bureau which had heretofore been a division of the work of this office has been transferred

to the Appointment Secretary, who registers all student applicants on a special card later sent to the Dean of Women for remarks. Another step has thus been taken toward centralization of all employment machinery, but further means must be evolved for keeping the Dean of Women accurately and promptly informed of all women students employed.

Women's Student Loan Fund: During the year 1919-20, eleven students received loans to enable them to continue their University work. Of these, two have already repaid in full the amounts loaned them. Two former students have completed payment on loans outstanding for several years, and two are making substantial payments from time to time. There has been one gift of two dollars to the fund. Small money gifts to the University might be effectively placed in this fund which is often the means of tiding girls over a period of financial stress that otherwise would compel them to leave the University.

Under the reorganized bookkeeping system of the Comptroller's Office, the Dean of Women is able to secure information about the loan fund at any time, as a check on her own records, and cancelled notes are sent to her for forwarding. Following is the financial statement to date:

Receipts:

Balance as recorded on University books, Dec. 31, 1919.....	\$ 119.68
Repayment of loans, Jan. 1, 1920, to Sept. 1, 1920.....	492.91
Interest on loans repaid.....	18.00
Gift to fund.....	2.00

Total\$ 632.59

Disbursements:

Loaned, Jan. 1, 1920, to Sept. 1, 1920.....	\$380.00
Balance forward Sept. 1, 1920.....	\$ 252.59
Unpaid loans	1,200.29
Total in fund.....	\$1,452.88

Tuition: Thirty-five women students applied and were approved for tuition notes and of these there have been 24 renewals. The tuition fee alone caused no withdrawal from the University among women students, so far as is known to the Dean of Women, who encouraged anyone who thought of leaving to discuss the matter with her.

Scholarships: The two scholarships given during the year 1919-20 for financially handicapped women students with good scholarship are a welcome addition to the three previously available. As noted in last year's report, there should be added to these at least five more for undergraduate women.

The Dean of Women welcomed the establishment of the Stanford Scholarships, the Scholarships for study in Belgium, and the thirty Graduate Scholarships which will aid in encouraging excellence in academic work, in rewarding excellence already attained, and in bringing to Stanford graduate students of proved ability.

Curriculum: The Dean of Women calls attention to the fact that a fair proportion of the women students elect courses in Economics, and

that of these the interest of the majority leans toward social rather than commercial applications of the subject. At present the courses in applied economics deal almost wholly with commercial aspects of economic life, and in consequence there come to this office repeated requests for courses in social economics. These and the inquiries of former students and prospective graduate students lead the Dean of Women to believe that graduate or advanced courses in social economics and social research would be of interest and service to Stanford women who wish to enter the field of trained social service.

HARRIET BRADFORD,
Dean of Women.

APPOINTMENT SECRETARY

The year 1919-20 has been one of remarkable growth for the Appointment Office in all phases of the work. For this reason, in spite of the fact that one additional permanent assistant was granted the office at the beginning of the year and three full-time clerical assistants have been employed during the spring and summer, everyone in this office has been too busy. It is clearly evident that five permanent clerical assistants are needed for the proper organization of the work. The four-quarter system is partially responsible for this condition inasmuch as it eliminates the slack season.

Early in October the office was removed from the two small rooms it previously occupied to the commodious new quarters provided upstairs in the Administration Building, formerly the library. These new quarters consist of a large reception room, in which the clerical assistants work and in which the files are kept, a private office for the Appointment Secretary, a small room for conferences between candidates and employers, a storeroom, a lavatory, and a good-sized room nearby for the filing of records which are not likely to be needed but which it is not advisable to destroy. These new quarters have been well furnished in oak. The improvements have been very much appreciated by everyone employed in the office, and have been favorably commented upon by numerous returning alumni and other visitors.

This year the work of the office has fallen naturally into five main divisions: the recommendation of teaching candidates, the recommendation of non-teaching candidates, the recommendation of candidates for temporary positions, vocational conferences and student employment.

TEACHING POSITIONS

The shortage of teachers which became acute last year became even more serious this year. One of the striking changes in the situation has been that many eastern teachers who have come to Stanford University to study have returned to their own states to teach because of the more attractive salaries offered there. Another very noticeable fact is that the teaching profession in none of its branches is attracting a sufficient

number of high school and undergraduate college students. This means that the future supply is low, not only for elementary teaching positions but also for the high school and university positions. If this condition prevails long the industries will feel it keenly and will see the value of making the teaching profession attractive to those who would like to make it their life work. The teaching profession has likewise been losing this year many of those who are thoroughly experienced and who have become dissatisfied with salaries little better than those paid beginners. Years of experience and advanced study must be taken more carefully into consideration when salary schedules are arranged if this exodus is not to continue. This is one of the reasons why the office has had this year fewer re-registrants for teaching positions. Another reason is that some school boards who realized the importance of keeping their experienced teachers have offered attractive salaries.

Many of the new registrants listed in the chart which follows are men and women who graduated from the University several years ago and who have recently decided to teach some special subject for which adequate beginning salaries are now being paid, for instance, Smith-Hughes work and athletics:

Registrants for Teaching positions—

New Registrants	1919-20	1918-19
Men	61	27
Women	90	80
Re-Registrants		
Men	74	82
Women	99	223
Total	324	412

There has been an alarming growth in the number of teaching positions for which the Appointment Office has had no candidate to recommend. A classified list follows:

Agriculture	7
Americanization	1
College President	1
Combinations of several subjects.....	14
Commercial	11
Dean of Women.....	1
Departmental work and Athletics.....	1
Domestic Science.....	8
Drawing and Athletics.....	2
Engineering	8
ENGLISH (only).....	12
English and French	1
English and History	1
English, Latin, Civics.....	1
English and Mathematics	1
French	4
Grades	69
HISTORY (only).....	4
History and Athletics	1
History and Sewing	1
History and Spanish	1

LATIN and Bookkeeping.....	1
Latin and French or English.....	3
Machine Shop	1
Manual Training.....	3
MATHEMATICS (only)	2
Mathematics and Athletics.....	4
Mechanical Drawing	3
Mining and Geology.....	1
MUSIC (only)	10
Music with Commercial or Mathematics.....	1
PHYSICAL TRAINING FOR BOYS.....	7
Athletics	1
Military Instructor	1
Physical Training and Commercial.....	3
Physical training for women.....	8
SCIENCE (only)	38
Science and Manual Training	2
Science and Mathematics	7
Science and Physical Training	5
Sewing with English, Mathematics or History.....	1
Shop and Printing.....	1
SPANISH (only)	8
Spanish and Commercial	2
Spanish and French	5
Spanish and Latin	2
Sub-normals	5
Vice-principal	4

This makes a total of 279 for the year as compared with a total of 154 last year.

Numerous requests for teachers were received in every month of the year, as the following statistical record indicates:

	Teachers	Principals
September	98	---
October	29	---
November	37	---
December	32	---
January	62	---
February	43	1
March	130	---
April	119	10
May	160	4
June	204	10
July	156	1
August	262	4

Note: Some of the August calls should really have been counted as a part of the work of June and July; all calls could not be answered promptly because of the heavy volume of the work.

This makes a total of 1332 for the year as compared with a total of 926 for last year. Besides the above we have had during the year a call from the government for as many educational and vocational directors as we can furnish; from a private boys' school for a young man who would be guide and philosopher to young boys; four calls for tutors or governesses; three calls for men to teach in summer schools, and two

requests for professors to handle night work in San Francisco. Also a general call from Fresno for teachers in the intermediate schools. Inasmuch as each request for a teacher is counted but once even though it may be repeated several times, this record far from represents the actual work done by the office. It has frequently been necessary to look five or six different times for a teacher for a certain position, both the school officials and the Appointment Secretary being hopeful that some new development may have made it possible to locate a desirable applicant.

NON-TEACHING POSITIONS

The rapid growth of this division of the work noted in last year's report has continued. It is becoming increasingly popular with the students and alumni. It is evident, however, that more publicity is needed both among undergraduates and alumni, as many who make use of this service have heard of it in a round-about manner and mention friends who should be informed. The idea is also proving popular with employers, who like to know that there is a central employment office at the university to which inquiries may be addressed for all kinds of assistants. The representatives of many of these firms have called at the office during the year to meet candidates. At such times the professors whose opinions are wanted are frequently called in consultation:

Registrants for Non-Teaching positions—		
New Registrants		
	1919-20	1918-19
Men	89	72
Women	53	62
Re-Registrants		
Men	30	12
Women	40	38
Technical—		
New Registrants		
Men	37	---
Women	1	---
Re-Registrants		
Men	38	---
Women	8	---
Total	296	184

The office received during the year the following requests to nominate candidates for non-teaching positions:

	Calls	No Candidates
Agriculture (rice—Fiji Islands).....	1	....
Astronomical work	1	1
Bacteriologist	5	....
Biological survey	1	....
Bookkeepers	2	....
Bureau of Ichthyology (P. I.).....	1	1
Business openings	35	....
Chemists	11	....
Comptroller	1	....
Concrete Inspector	1	1
Educational Director	1	....
Engineers		
Chemical	4	....
Civil	15	8
Electrical	14	8
Mechanical	63	12
Mining	2	....
Fellowship in Industrial Research.....	1	....
Geology and Mining.....	4	1
Horticulture	2	....
Internes (for relief work).....	4	....
Law clerks	7	1
Librarian	2	....
Newspaper work	2	....
Organizing Americanization work.....	1	....
Physicist	1	....
Probation officer	2	....
Psychological investigator	1	....
Salesmen	15	....
Secretaries and office workers.....	52	4
Social service	3	....
Statistician	1	....
Steel inspector	1	....
Unskilled, rodman, etc.....	5	3
Total	262	40

Note: We also had permanent requests for men interested in the fruit business, coffee importing business, real estate, underwriting insurance, oil geology, engineering, executive recreation work, sales and executive work, soliciting, and in work with the U. S. Shipping Board.

It will be noted that there is a great variety in these requests.

STUDENT EMPLOYMENT

Ever since 1916 the Appointment Office has assisted students, who had particular skill, in obtaining part-time employment as a means of paying part of their college expenses. Beginning with January 1, 1920, at the suggestion of the Dean of Women, the office enlarged the scope of its service to include all the part-time employment of women students. On April 1, 1920, the office also took full charge of the part-time employment of men students, which had formerly been conducted jointly by the Appointment Office, the Dean of Men and the Young Men's Christian Association. This was done for the purpose of securing a better organization of the work. It is felt that this will result in preventing some students from breaking down physically and in preventing others from failing in their studies. It will certainly be the means of ascertaining who is most in need of employment and who is best qualified for each particular position. There were 173 men and 76 women—a total of 249 students—who registered during this year for part-time employment. In the same period there have been 497 requests for part-time services. The office has filled 383 of these positions but has had to report "no candidate" for 114 of them. A statistical record of the positions for which the office was asked to recommend candidates follows:

KIND OF WORK	PERMANENT			TEMPORARY			Total
	Palo Alto	Campus	Outside	Palo Alto	Campus	Outside	
Bookkeepers.....	1	0	0	0	1	0	2
Canvassing.....	3	5	0	0	0	1	9
Care children.....	5	2	2	3	3	0	15
Carpenters.....	0	0	0	1	1	1	3
Chauffeur.....	1	1	0	1	0	0	3
Clerical—without Typing.....	1	1	0	0	11	0	13
Clerking.....	2	0	0	0	0	2	4
Garden work.....	13	4	1	27	0	2	47
Housework—Board.....	5	8	0	0	0	0	13
" Board and Room.....	16	7	2	1	0	0	26
" Cash.....	6	13	0	0	0	0	19
Manual labor.....	20	3	0	14	14	1	52
Miscellaneous.....	11	10	6	11	15	4	57
Night work.....	1	1	0	1	0	0	3
Saturday work—Cash.....	2	5	2	42	16	10	77
Stenographers.....	2	11	1	4	5	0	23
Tutor with athletics.....	0	0	4	0	0	1	5
Tutor without athletics.....	23	4	5	4	2	2	40
Typists.....	1	10	0	2	28	1	42
Waiters—Board.....	12	5	5	1	3	0	26
Waiters—Board and Room.....	2	3	0	0	0	0	5
Waiters—Cash.....	0	0	0	0	2	0	2
Work for room.....	3	8	0	0	0	0	11
Totals.....	130	101	28	112	101	25	497

FULL-TIME TEMPORARY POSITIONS

This office has registered during the year 142 men and 37 women for full-time temporary work. The chart which follows indicates the number of requests received by the office for this kind of service and the number of placements made:

	CALLS—MEN	PLACEMENTS—MEN
Boys' Camp.....	4.....	2
Canvassing-soliciting.....	47.....	8
Chauffeur.....	2.....	1
Clerical—office.....	6.....	2
Clerking.....	1.....	0
MANUAL:		
Canneries.....(2 specific—1 general).....		Several
Fruit.....	11.....	5
Heavy manual.....	30.....	0
Miscellaneous.....	10.....	6
Ranch.....	4.....	1
Summer resort.....	15.....	3
Miscellaneous.....	4.....	0
TECHNICAL:		
Chemists.....	4.....	1
Electricians.....	6.....	1
Geologists.....(1 specific—1 general).....		0
Mechanics.....(8 specific—1 general).....		3
Rodman, etc.....	4.....	1
Tutors.....	4.....	1
Total Calls.....	166	Total Placements..... 35

	CALLS—WOMEN	PLACEMENTS—WOMEN
Clerking.....	1.....	0
Housework.....	7.....	0
Miscellaneous.....	5.....	0
Tutor-governess.....	3.....	0
Soliciting.....(4 specific—1 general).....		0
Stenography—Clerical.....	6.....	4
Summer Resorts.....	31.....	9
Total Calls.....	58	Total Placements..... 13
Grand total—Calls.....		224
Grand total—Placements.....		48

Note: Besides the above, we received a general call from Alaska for 300-400 men as laborers; from a shipyard, a call for as many men as possible; ranches and canneries have also made their calls very general—for good, earnest men.

There are three causes for the small proportion of placements in this type of work: first, many of the requests were received either too early or too late to be of interest to the students; second, the majority of the students registered did not want the kind of work offered; and, third, the office needs further publicity among the undergraduates so that a larger percentage of those who want work will know where to register. Improved methods contemplated ought to enable the office to make a better record next year.

VOCATIONAL CONFERENCES

Records of all the individual vocational conferences held during the year have not been kept, but a record has been kept of the number of such conferences held by the Appointment Secretary, as a member of the Vocational Guidance Committee, with the students who expressed a desire for such conferences. There were 68 conferences of this sort, 19 of which were with freshmen; 7 with sophomores; 8 with juniors; 4 with seniors; and 30 with graduate students. Of the 9 others who asked for such conferences 4 failed to keep appointments, and 5 could not be located at the time we endeavored to reach them. These conferences proved helpful in many unexpected ways—both to the students and to the office.

GENERAL DATA

During the year the Appointment Secretary acted as delegate at the State High School Principals' Convention, at the State Superintendents of Schools' Convention, at the Seventh National Foreign Trade Convention, and at a district meeting of the Parent-Teachers' Association.

The Appointment Secretary acted during the year as a member of the faculty committee on Vocational Guidance and as a member of the special committee appointed by the President to consider the best method for Stanford to pursue in the training of physical education teachers.

Throughout the year, whenever there was time to do so, letters were written to prominent alumni and firms who had asked for candidates but did not know of the existence of the Appointment Office, calling to their attention the work of the office and inviting them to cooperate with it in the future. Excellent results have been obtained from this correspondence.

A gift of \$100.00 was made to the office by Mr. Robert F. Stever, an alumnus, as a token of his appreciation of the organized effort of the University to assist its graduates in obtaining positions.

RECAPITULATION

The daily records kept by the Appointment Office during the year have resulted in the following interesting data:

Total number of Teaching Registrants	324
Total number of Non-teaching Registrants	296
Total number of Part-time Registrants	249
Total number of Full-time Temporary Registrants.....	179
Total number of Non-Stanford Registrants	36
(Note: The non-Stanford registrants were principally those who registered for office work on the campus.)	
Grand total Registrants for the year.....	1084

MONTH	Visitors	Letters	Recommendation Blanks Mailed	Sets of Recommendations Sent Out
September.....	191	428	586	
October.....	364	245	276	
November.....	334	324	375	
December.....	388	365	387	
January.....	529	467	347	
February.....	386	368	378	
March.....	539	547	508	
April.....	506	821	322	
May.....	476	899	294	
June.....	508	1,024	403	
July.....	437	1,065	566	
August.....	311	845	256	
Totals for year.....	4,969	7,398	4,698	2,444
Average per month.....	414+	616½	391½	203½
Increase over last yr.'s totals	1,878	2,260	1,502	158

ELIZABETH B. SNELL,
Appointment Secretary.

UNIVERSITY CHAPLAIN

PUBLIC WORSHIP

Services have been maintained as follows: Daily, morning prayer with address at 7:50; Sunday, Divine Worship with sermon at 11; Holy Communion periodically.

The following named clergymen preached on the dates named:

AUTUMN QUARTER

October 5th, the Chaplain; October 12th, 19th and 26th, Rev. O. P. Gifford, Buffalo, Baptist; November 2nd, the Chaplain; November 9th, Rev. W. H. Cambridge, San Mateo, Episcopalian; November 16th, 23rd, and December 7th, the Chaplain; December 14th, Rev. James A. Francis, Los Angeles, Baptist.

WINTER QUARTER

January 11th, Rev. Robert Freeman, Pasadena, Presbyterian; January 18th, Colonel Sanborn, Sparks, Nevada, Episcopalian; Rabbi Martin A. Meyer, San Francisco, Hebrew; February 1st and 8th, Bishop Nathaniel S. Thomas, Cheyenne, Wyoming, Episcopalian; February 15th, Rev. Robert W. Patton, Virginia; February 22nd, the Chaplain; February 29th, Rev. Silas W. Evans, President of Occidental College; March 7th, Bishop Edward L. Parsons, San Francisco, Episcopalian; March 14th, Mrs. Aurelia H. Reinhardt, President of Mills College, Unitarian; March 21st, Dr. E. F. Hallenbeck, San Diego, Presbyterian.

SPRING QUARTER

April 4th and 11th, the Chaplain; April 18th, Rev. Merle M. Smith, Pasadena, Methodist; April 25th, the Chaplain; May 2nd, Rev. James L. Gordon, San Francisco, Congregationalist; May 16th, 23rd and 30th, Rev. Richard Roberts, Brooklyn, Congregationalist; June 6th, 13th and 20th, Rev. G. A. Johnston Ross, New York, Presbyterian.

SUMMER QUARTER

July 4th, 11th and 18th, Rev. J. W. Gresham, San Francisco, Episcopalian; July 25th, August 1st and 8th, Rev. Carl S. Patton, Los Angeles, Congregationalist; August 15th, Rev. Leslie Learned, Pasadena, Episcopalian; August 22nd, Rev. C. S. S. Dutton, San Francisco, Unitarian.

Special services were arranged for

- (a) Matriculation Sunday,
- (b) Decoration Day,
- (c) Baccalaureate Sunday.

BIBLE CLASSES

On Sunday morning throughout the year University Bible Classes were held in the Church under the leadership of Professor Johnston, Professor Murray or Professor Martin, and the Rev. F. E. Morgan, Y. M. C. A. Secretary.

LECTURES

The Chaplain gave courses of lectures in the University on "The Life and Teaching of Christ."

For the benefit of freshmen a lecture on the architecture, decoration and symbolism of the Church was given to several groups.

SOCIAL SERVICE

The year's work has centred on the development of the Stanford Home for Convalescent Children and reached its culmination in the dedication of the old Stanford residence and grounds as a permanent home for this charity. The work involves not only the care of a constantly changing family of delicate and sometimes crippled children, but also the education of students in the practical elements of social service. The women of the University have helped in the daily care of the children, and the men organized a labor day for cleaning up the neglected grounds. It should be noted that the Home is financially well supported—all the expenses of maintenance are paid to date, and we have a substantial balance on hand in our current funds. Thanks to the extraordinary devotion of Mr. and Mrs. Hopkins the permanence of the Home is assured by an endowment fund of over \$30,000.

Students also gathered the sum of \$150 for the Permanent Blind Relief War Fund for soldiers and sailors of the Allies.

The Chaplain has also continued to act as Chairman of the Home Service Section of the Palo Alto Chapter of the American Red Cross,

having the care of sick and disabled soldiers and their families, and also helping financially the students of the Federal Vocational Board who are working in the University.

MUSIC

Mr. Warren D. Allen has given organ recitals on Tuesdays, Thursdays and Sundays of each week.

The choir has done consistently good work in the services of the Church.

In addition the University was privileged on two special occasions—first, at the end of the autumn quarter, the choir sang the Christmas music from Handel's oratorio "Messiah."

The crowning musical event of the year was the performance of Verdi's Requiem on Decoration Day—a solemn occasion never to be forgotten by the University.

PASTORAL

The Chaplain has kept office hours, daily, from 8:15 to noon and by appointment afternoons and evenings.

DAVID CHARLES GARDNER,
Chaplain.

CURATOR OF THE MUSEUM

The year's work at the Leland Stanford Junior Museum has been composed of the care and attendance connected with the various collections of the institution, the gradual improvement, as regards labeling and display of exhibits, and the arrangement and display of exhibits in the Art Gallery.

Material accumulated in the storerooms and excess material in a number of rooms have been assembled toward special exhibit displays in one or two of the rooms now partly occupied.

One of the Museum painting galleries has been retinted to afford a better background for the Timothy Hopkins collection.

The Stanford Memorial Room has been completely renovated, the walls and cases retinted and material rearranged. With the exception of finishing the labeling, the room is ready to be opened. The arrangement of material has been selected toward showing the genealogical history of the founders of the University together with such objects as contain historical interest.

The following loans, gifts and purchases have been added to the Museum during the year:

Old Guns, California Pioneer Articles and South Sea Island War Implements, loaned by J. E. Hewston.

Babylonian Tablets, bought from Edgar J. Banks of Alpine, New Jersey.

German *Lusitania* Medal, obtained by Stanford student in Germany and sent to Museum by President Wilbur.

Early American and Colonial articles, donated by Mr. and Mrs. Oldroyd.

Blow-guns and Accessories from Colombia, South America, bought from M. V. Campbell by Stanford University.

Old Sewing Machine, patent date from 1846 to 1860, donated to Museum by Mrs. C. C. Fowler of Canfield, Ohio, from the estate of Mrs. Emeline Truesdale of Palo Alto.

Fish Fossils of the Miocene period, donated by Dr. David Starr Jordan.

Wedgwood China, five pieces, loaned by Mrs. Fairclough.

Ancient Costa Rican Pottery, bought from Ada Monteleagre.

Chinese Furniture and Vases, loaned by Prof. George J. Peirce.

Silk Floss from Japan, donated to Museum by Prof. Takehisa Suzuki.

World War Souvenirs, donated to Museum by France.

Medal from University of Paris, France, to Stanford University as a token for Stanford's part in the World War.

The attendance for the year is reported as follows: For the year commencing with September, 1919, and ending with August, 1920, the total number of paid admissions was 6,699, for which the sum of \$1,674.75 has been collected and paid over to the Comptroller's Office. Besides this there has been a good attendance on the free day of each week, Monday; as well as the student and faculty visitors who are admitted without charge.

PEDRO J. LEMOS,
Curator.

THOMAS WELTON STANFORD ART GALLERY

Since October, 1919, up to the close of the college year, the Thomas Welton Stanford Art Gallery has displayed a changing series of exhibitions lasting from two to four weeks. These exhibitions have attracted visitors from all parts of the peninsula as well as various parts of the state, and have been seen by a large number of tourists. Comments would seem to indicate that the transient exhibits were thoroughly appreciated and enjoyed by those who saw them.

The following collections were included in the year's exhibitions:

1. Exhibition of Textiles.
2. Fish Fossils from Dr. Jordan with Restoration Drawings of same by William S. Atkinson.
3. Oil Paintings from collections of J. H. Meyer.
4. Watercolor Pictures from the American Watercolor Society.
5. Art Drawings from American Federation of Art.
6. Prints from Print-makers of Los Angeles.
7. Oil Paintings by Charles Rollo Peters.
8. Japanese Drawings by T. K. Shimada.

9. Students' Art Work from Pratt Institute.
10. Wild Flowers by Miss Ida Johnson.
11. Wild Flower Landscapes by Miss Culbertson.
12. Art Photographs from California Camera Club.
13. Oil Paintings by Contemporary Artists from American Federation of Arts.

PEDRO J. LEMOS,
Curator.

REGISTRAR

The total number of students in 1919-20 (including the summer quarter) was 2949. Of these 1798 had previously been in attendance, 1151 were new students. As compared with 1918-19 there was an increase in old students of 584, and in new students of 98, making a total advance over the previous year of 682. The largest attendance of any one quarter was 2451 (the autumn quarter). The large increase in the number of old students is due of course to the cessation of the war and the return of men who had been engaged in the service. The increase in new students is due mainly to the fact that provision was made for war service men, including those sent to us by the Federal Vocational Board, outside of the 450 limit for entering men. From this time on, under the provisions now in force, there can be an increase of new students only among the groups with more than a year and a half advanced credit. The normal number of students in the University for the autumn quarter may, therefore, be set at about 2500.

The third summer quarter, under the new four quarter system, registered a total of 685 students. Of these, 529 had previously been registered in the University, 157 were new students. Of these 685 students, 247 were in graduate standing, 438 in undergraduate standing. As heretofore, there were about half as many courses offered in the summer quarter as in any one of the preceding quarters. No "popular" courses and very few elementary courses were offered. Engineering was not represented, and the following departments offered comparatively few courses: Applied Mathematics, Geology, Mathematics, Physics, Psychology. The departments offering relatively full programs were Chemistry, Economics, Education, English, German, Latin, Law, Political Science, and Romanic Languages. The emphasis was placed on advanced and graduate work. The comparatively small number of new students attracted to the summer quarter may be attributed in a large part to the restricted program and the omission of "popular" courses.

DISTRIBUTION OF ENTERING CLASS, 1919-20

FROM COLLEGES, ETC.

Adrian College, Tex.....	1	Missouri State Teachers' College.....	1
Acadia University	1	Montana State College.....	1
Agnes Scott College.....	1	Morningside College	1
Albany Law School.....	1	National University of Mexico.....	2
Alberta University	1	Nebraska Wesleyan	2
Atenjo de Manila.....	2	North Pacific College.....	1
Baker University	1	Northwestern University	8
Bates University	1	Oberlin College	3
Baylor University	1	Occidental College	7
Bethany College	1	Ohio State University.....	2
Boston University	1	Oregon Agricultural College.....	11
Brigham Young University.....	1	Peabody College for Teachers.....	1
Bryn Mawr College.....	1	Pei Yang University.....	1
Buddist University (Kyoto).....	1	Pomona College	15
Cal. College of Pharmacy.....	1	Pratt Institute	1
Carleton College	1	Princeton University	1
Catholic University of America.....	1	Reed College	6
College of Carlotenberg (Berlin).....	1	Rose Poly. Institute.....	1
College of Charleston	1	Royal College of Science (Dublin).....	1
College of the Holy Name.....	1	Santa Clara University.....	4
College of Hawaii	1	Simmons College	1
College of the Pacific	21	St. Louis University	1
College of Sao Paulo, Brazil.....	1	St. Mary's College	3
College of Texas	1	Swarthmore College	1
Columbia University (N. Y.).....	3	Teachers' College (N. Y.).....	1
Colorado Teachers' College.....	2	Texas School of Mines.....	1
Columbia University (Portland).....	1	Throop College of Tech.....	5
Colorado College	3	Tokyo Imperial University.....	5
Colorado School of Mines.....	2	Transylvania University	1
Cornell University	2	Tulane University	1
Dartmouth College	2	University of Arizona	1
De La Salle College Inst.....	1	University of Athens	1
Denison University	1	University of Bombay	1
Doane College	1	University of British Columbia	1
Dominican College	1	University of California	64
Earlham College	1	University of Chicago	9
Ellsworth (Iowa) College.....	1	University of Colorado	7
Emory University	1	University of Denver	3
George Peabody College.....	1	University of Idaho	1
George Washington University.....	2	University of Illinois	4
Goucher College	1	University of Indiana	2
Grinnell College	1	University of Iowa	4
Harvard University	4	University of Kansas	7
Illinois Wesleyan	1	University of Maine	1
Iowa State College.....	2	University of Michigan	5
Johns Hopkins University.....	1	University of Minnesota	6
Kalamazoo College	1	University of Missouri	6
Kansas Wesleyan	1	University of Montana	2
Knox College	1	University of Nebraska	5
Knoxville College	1	University of Nevada	4
Lake Forest College.....	1	University of New Brunswick	1
Lawrence College	1	University of North Dakota	1
Lordsburg College	1	University of Notre Dame	1
Maryville College	1	University of Oklahoma	8
Massachusetts Agricultural College.....	1	University of Oregon	3
McGill University	1	University of Oxford	1
Mills College	3	University of Pennsylvania	1

University of Petrograd	1	United States Naval Academy.....	2
University of Philippines	1	Utah Agricultural College.....	4
University of Pittsburgh	2	Vassar College	2
University of Puget Sound	1	Valparaiso University	1
University of Redlands	4	Washburn College	1
University of Rochester	1	Washington State College.....	6
University of Southern California	28	West Point Military Academy.....	1
University of Texas	4	Whittier College	1
University of Utah	13	Willamette University	1
University of Utrecht	1	William and Mary College.....	1
University of Virginia	2	Williams College	1
University of Washington	11	Yale University	4
University of Wisconsin	7		

FROM STATE NORMAL SCHOOLS

Albion (Ida.)	1	San Francisco	1
Bellingham (Wn.)	1	San Jose	16
Cheney (Wn.)	3	Santa Barbara	1
Chico	1	Southeastern (Okla.)	1
Fresno	1	Troy	1
Los Angeles	4	Western (Ill.)	1
San Diego	1	Whitewater (Wis.)	1

FROM HIGH SCHOOL JUNIOR COLLEGES

Auburn	1	San Luis Obispo	1
Chaffey	2	Santa Ana	1
Fullerton	1	Santa Barbara	3
Los Angeles	4	Santa Rosa	1
Pomona	1	Turlock	1
San Diego	1		

FROM PREPARATORY SCHOOLS

Aberdeen (Wn.) Weatherwax H. S.....	5	Bozeman (Mont.) H. S.....	1
Albuquerque (N. M.) H. S.....	1	Brazil (Ind.) H. S.....	1
Alexandria (Minn.) H. S.....	1	Buckfield (Me.) H. S.....	1
Alhambra H. S.....	3	Burley (Ida.) H. S.....	1
Anaheim H. S.....	1	Campbell H. S.....	3
Anderson Valley H. S.....	1	Centreville (Wn.) H. S.....	1
Angels Camp—		Ceres H. S.....	2
Bret Harte H. S.....	1	Chico H. S.....	2
Antelope Valley H. S.....	1	Claburne (Tex.) H. S.....	1
Antioch H. S.....	1	Clovis H. S.....	1
Arroyo Grande H. S.....	1	Cody (Wyo.) H. S.....	1
Ashland (Ohio) H. S.....	1	College Park Academy.....	1
Ashland (Ore.) H. S.....	1	Colton H. S.....	1
Ashtabula (Ohio) H. S.....	1	Colusa H. S.....	1
Atkinson (Neb.) H. S.....	1	Colville (Wn.) H. S.....	1
Aurora (Ill.) H. S.....	1	Compton H. S.....	2
Bakersfield (Kern Co. Un.) H. S.....	5	Concord H. S.....	1
Bedford (England) School.....	1	Conley H. S.....	1
Bellefonte (Pa.) Acad.....	1	Coronado H. S.....	1
Belmont School	1	Corsicana (Tex.) H. S.....	1
Berkeley—		Culver (Ind.) Military Acad.....	4
Berkeley H. S.....	2	Dallas (Tex.) Bryan H. S.....	1
Berkeley Prep. School.....	2	Dana College Academy.....	1
Randolph School	1	Delano H. S.....	5
Bertrand (Neb.) H. S.....	1	Denver (Colo.)—	
Bismarck (N. Dak.) H. S.....	1	Manual Training H. S.....	1
Blackfoot (Ida.) H. S.....	3	North Side H. S.....	1
Boise (Ida.) H. S.....	3		

Dinuba H. S.....	1	Lincoln H. S.....	3
Douglass (Ariz.) H. S.....	1	Marlborough School	1
El Centro H. S.....	1	Manual Arts H. S.....	4
El Dorado Co. H. S.....	2	Los Angeles Poly. H. S.....	8
Elko (Nev.) H. S.....	1	Westlake School for Girls.....	1
Emmett (Ida.)	2	Los Gatos H. S.....	4
Escondido H. S.....	1	Madera H. S.....	2
Eureka H. S.....	5	Malad (Ida.) H. S.....	2
Eureka (Ut.) H. S.....	1	Maui (H. T.) School.....	1
Faribault (Minn.)—		McHenry (Ill.) H. S.....	1
Shattuck School	1	Medicine Hat (Alta., Can.)—	
Florence (Colo.) H. S.....	1	Alexandra School	1
Fort Dodge (Ia.) H. S.....	1	Meridian (Ia.) H. S.....	1
Fort Scott (Kans.) H. S.....	1	Mexico National Prep. School.....	1
Fowler H. S.....	1	Minneapolis (Minn.) North Side H. S.	1
Frances Willard (Wn.) H. S.....	2	Mitchell (Neb.) H. S.....	1
Fresno H. S.....	5	Modesto H. S.....	7
Genesee Township (Ill.) H. S.....	1	Monett (Mo.)	1
Gilroy H. S.....	1	Montebello H. S.....	1
Glendale H. S.....	3	Monterey H. S.....	3
Grand Junction (Colo.) H. S.....	1	Montesano (Wn.) H. S.....	1
Grandview (Wn.) H. S.....	1	Montezuma Mountain Ranch School....	1
Grangeville (Ida.) H. S.....	1	Morgan Hill H. S.....	1
Greeley (Colo.) H. S.....	1	Mt. Angel (Ore.) Academy.....	1
Greenfield (Mo.) H. S.....	1	Mt. Diablo H. S.....	1
Hanford H. S.....	1	Mt. Tamalpais Mil. Acad.....	1
Hayward H. S.....	2	Mountain View H. S.....	8
Healdsburg H. S.....	1	Napa H. S.....	3
Hilo H. S.....	1	Newburgh (Ill.) H. S.....	1
Holly (Colo.) H. S.....	1	New London (Conn.)—	
Hollywood H. S.....	8	Bulkelay School	1
Hoquiam (Wn.) H. S.....	2	New York (N. Y.)—	
Hornell (N. Y.) H. S.....	1	Horace Mann School.....	1
Hotchkiss (Conn.) School.....	1	St. John's Manlius School.....	1
Houston (Tex.)—		North Bend (Ore.) H. S.....	1
Central H. S.....	1	North Platte (Neb.) H. S.....	1
Hughson H. S.....	1	Oakcliffe (Tex.) H. S.....	2
Humboldt Co. H. S.....	1	Oakland—	
Jennings (La.) H. S.....	1	Oakland H. S.....	2
Jerome (Ida.) H. S.....	2	Fremont H. S.....	1
Kalamazoo (Mich.) H. S.....	1	Oakland Technical H. S.....	4
Kalispell (Mont.)—		University School	1
Flathead H. S.....	1	Ogden (Ut.)—	
Keokuk (Ia.) H. S.....	1	Ogden H. S.....	3
King Edward (Vancouver, B.C.) H.S.	1	Ogden Senior H. S.....	2
Kingsburg H. S.....	2	Ontario—	
Klamath Co. (Ore.) H. S.....	1	Chaffey Union H. S.....	2
Knoxville (Tenn.) H. S.....	1	Orange H. S.....	1
La Porte (Ind.) H. S.....	1	Oxnard H. S.....	1
Lemoore H. S.....	1	Pacific Grove H. S.....	1
Lewiston (Ida.) H. S.....	1	Palo Alto—	
Liberty (Mo.) H. S.....	1	Palo Alto H. S.....	37
Lincoln (Neb.) H. S.....	1	Castilleja School	7
Lindsay H. S.....	2	Harker's School	6
Lompoc H. S.....	1	Manzanita Hall	1
Long Beach Poly. H. S.....	8	Pasadena H. S.....	8
Los Angeles—		Paso Robles	2
Los Angeles H. S.....	10	Perris H. S.....	1
Harvard School	10		

Petaluma H. S.....	3	Santa Clara H. S.....	4
Philadelphia (Pa.)—		Santa Cruz H. S.....	2
Penn Charter School.....	1	Santa Fe (N. Mex.) H. S.....	1
Philomath (Ore.) H. S.....	1	Santa Inez Valley H. S.....	2
Phoenix (Ariz.) H. S.....	5	Santa Maria H. S.....	1
Polson (Mont.) H. S.....	1	Santa Monica H. S.....	3
Pomona H. S.....	2	Santa Rosa H. S.....	2
Porterville H. S.....	3	Seattle (Wn.)—	
Portland (Ore.)—		Broadway School.....	1
Franklin H. S.....	1	Queen Anne H. S.....	1
Jefferson H. S.....	7	Sebastopol—	
Lincoln H. S.....	2	Analy Union H. S.....	3
Washington H. S.....	4	Sheffield (Ill.) H. S.....	1
Prescott (Ariz.) H. S.....	1	Sidell (Ill.) H. S.....	1
Pueblo (Colo.)—		South Pasadena H. S.....	4
Centennial H. S.....	1	Spokane (Wn.)—	
Puente H. S.....	1	Lewis & Clark H. S.....	4
Puyallup (Wn.) H. S.....	1	North Central H. S.....	4
Quincy H. S.....	1	Springfield (Ill.) H. S.....	1
Ray H. S.....	1	Springfield (Ill.) H. S.....	1
Rawlins H. S.....	1	St. Louis (Mo.)—	
Red Bluff H. S.....	2	Soldan H. S.....	1
Redondo H. S.....	2	Yeatan H. S.....	1
Redwood City—		Stockton H. S.....	5
Sequoia Un. H. S.....	7	Sunnyside (Wn.) H. S.....	1
Ritzville (Wn.) H. S.....	2	Superior (Wis.) H. S.....	1
Riverside—		Sutter H. S.....	3
Boys' H. S.....	1	Swarthmore Preparatory School.....	1
Riverside Poly. H. S.....	4	Tacoma (Wn.)—	
Roseburg (Ore.) H. S.....	1	Anne Wright Seminary.....	1
Sacramento H. S.....	2	Stadium H. S.....	1
Salinas H. S.....	2	Tamalpais H. S.....	1
Salt Lake City (Ut.)—		Temple (Ariz.) H. S.....	1
East Side H. S.....	1	Tennessee Military Institute.....	1
West Side H. S.....	2	The Dallas (Ore.) School.....	1
Saltsburg (Pa.)—		Tipton (Ind.) H. S.....	1
Kiskimenetas Springs School.....	1	Toode (Ut.) H. S.....	1
San Bernardino H. S.....	1	Topeka (Kans.) H. S.....	1
San Diego H. S.....	15	Tucson (Ariz.) H. S.....	1
San Francisco—		Tulare H. S.....	1
Calif. School Mech. Arts.....	4	Tulsa (Okla.) H. S.....	1
Cogswell School.....	1	Turlock H. S.....	1
Girls H. S.....	3	Twin Falls (Ida.) H. S.....	4
Hamlin School.....	1	Ukiah H. S.....	2
Lowell H. S.....	12	University of Santa Clara Prep.....	1
Miss Burke's School.....	1	Vallejo H. S.....	1
Polytechnic H. S.....	6	Walker Co. (Ala.) H. S.....	1
Potter School.....	1	Wausau (Wis.) H. S.....	1
University School.....	7	Washington (D. C.) Western H. S.....	1
Sanger H. S.....	1	Washington (Ia.) H. S.....	1
San Jose H. S.....	35	Waterville (Wn.) H. S.....	1
San Luis Obispo—		Watsonville H. S.....	1
Calif. Polytechnic School.....	1	Webster Grove (Mo.) H. S.....	1
San Mateo H. S.....	5	Wendell (Ida.) H. S.....	1
San Rafael—		Westbrook (Me.) Seminary.....	1
San Rafael H. S.....	1	Whitewater (Wis.) H. S.....	1
Hitchcock Military Academy.....	2	Winslow (Ariz.) H. S.....	1
Santa Ana H. S.....	6	Woodland H. S.....	1
Santa Barbara H. S.....	2	Wynnewood (Okla.) H. S.....	1

COMPARATIVE REGISTRATION, 1915-16 TO 1919-20

	1915-16	1916-17	1917-18 ¹	1917-18 ²	1918-19	1919-20
Old students.....	1,399	1,449	1,077	269	1,214	1,798
New students.....	801	738	826	97	1,053	1,151
Totals.....	2,200	2,187	1,903	366	2,267	2,949
Percentage of returning students.....	68.0	65.8	56.5		53.5	60.8
From California.....	1,611	1,629	1,441		1,728	2,123
From other states and countries.....	589	558	462		539	826
Percentage outside California.....	26.7	27.0	24.2		23.7	28

AVERAGE AGE OF MATRICULATES

	1915-16	1916-17	1917-18 ¹	1917-18 ²	1918-19	1919-20
Graduates.....	28.5	27.6	29.6	33.5	30.0	30.30
Advanced standing.....	21.7	19.8	21.2	28.5	23.8	23.08
Freshmen.....	19.3	19.3	19.2	18.9	19.6	19.46
Specials.....	24.9	23.2	22.9	37.4	25.1	25.72

AGE OF FRESHMEN AT MATRICULATION

	1915-16	1916-17	1917-18 ¹	1917-18 ²	1918-19	1919-20
Under 17.....	16	17	3	1	19	37
17-18.....	59	83	79	6	87	81
18-19.....	142	141	137	3	239	205
19-20.....	133	120	128	1	173	123
Over 20.....	123	112	97	2	145	170
Totals.....	473	473	444	13	663	616

DISTRIBUTION OF ENTERING CLASS

	1917-18 ¹	1917-18 ²	1918-19	1919-20
From Colleges—				
Graduates.....	67	36	80	146
With advanced standing.....	157	25	221	290
Without advanced standing.....			6	
Totals.....	224	61	307	436
From Normal Schools.....	20	19	26	34
From High School Junior Colleges.....	31	1	37	17
From preparatory schools—				
On recommendation (wholly or mainly)				
In full standing.....	442	13	659	614
Wholly on examination.....	2			3
Special students.....	9	3	24	47
Totals.....	728	97	1,053	1,151

¹—Omitting summer quarter.²—Summer quarter only.

STATISTICS OF GRADUATION

The total number of degrees conferred in 1919-20 (October, January, April, and June) was 474 distributed as follows:

	Ph. D.	M. D.	J. D.	A. M.	Eng'r.	LL. B.	A. B.
Bacteriology and Experimental Pathology.....							8
Botany.....							4
Chemistry.....	1			1	2		38
Economics.....				1			76
Education.....	4			9			13
Education (Graphic Art).....				1			7
Engineering:							
Civil.....					2		17
Electrical.....					2		2
Mechanical.....					2		28
English.....				8			32
Entomology.....							2
Geology.....				2			22
Germanic Languages.....				2			2
History.....				7			19
Latin.....				4			3
Pre-legal.....						2	42
Law.....			22				
Mathematics.....							8
Medicine.....		20					
Mining and Metallurgy.....					3		
Philosophy.....				1			3
Physics.....				1			1
Physiology.....				2			6
Political Science.....							2
Pre-Clinical.....							8
Psychology.....							3
Romanic Languages.....	1			3			18
Zoology.....							6
At Large.....							1
Totals.....	6	20	22	42	11	2	371

ORRIN LESLIE ELLIOTT,
Registrar.

APPENDIX V.

PUBLICATIONS OF THE FACULTY

(Compiled by the Staff of the Reference Division of the Library)
September, 1919—August, 1920

DAVID STARR JORDAN, Chancellor Emeritus:

- Balance of power and fighting units: *Public*, vol. 22, September 13, 1919.
- Balkan serpents: *New Republic*, vol. 21, January 28, 1920.
- The crisis in Mexico: *Public*, vol. 22, September 20, 1919.
- Genera of fishes—III From Guenther to Gill; IV from 1881-1920; *Leland Stanford Junior University Publications, University Series*, 1919-20.
- George Washington: *San Jose News*, February 23, 1920.
- Chisel-mouth Bill of Oregon (*Irillion oregonus*); *American Angler*, vol. 4, December, 1919.
- The Democratic national Convention of 1920. 7 syndicated letters, International News Co.
- Description of a new fossil fish from Japan: *Proceedings of the California Academy of Sciences*, vol. 9, October 22, 1919.
- Doing things for the love of them: *Touchstones of Success*, Vir Publishing Co., Philadelphia, 1920.
- Fossil fishes of diatom beds of Lompoc, California: *Leland Stanford Junior University Publications, University Series*, 1919.
- Fossil fishes of Southern California—I Fossil fishes of Soledad deposits; II Fossil fishes of the Miocene (Monterey) formations (with J. Z. Gilbert); III Fossil fishes of the Pliocene formations (with J. Z. Gilbert): *Leland Stanford Junior University Publications, University Series*, 1919.
- The founding of Stanford: *Stanford Illustrated Review*, vol. 21, March, 1920.
- A great victory at that: *Public*, vol. 22, November 29, 1919.
- International aspects of certain biological problems of the north Pacific: California University. *Semicentenary of the Founding of the University with . . . the Conference on International Relations*, Berkeley, 1919.

Is the future of the world in the hands of its youth? [Letters]: *Pittsburgh Dispatch*, June, 1920.

Japanese in California. [Letters]: *New York Globe*, August 18, 1920.

Joaquin Miller visits Stanford: *Overland Monthly*, vol. 75, February, 1920.

The manifesto of the ninety-three professors, October 11, 1914, . . . : *New Republic*, vol. 21, February 18, 1920.

Militarism: *Public*, vol. 22, September 27, 1919.

A Miocene catastrophe: *Natural History*, vol. 20, February, 1920.

Need of continual progress. Commencement address at the centennial anniversary of Indiana university: *Indiana Student*, 1920.

The new fight for democracy: *Sunset*, vol. 43, September, 1919.

New genera of fossil fishes from Brazil: *Proceedings of the Academy of Natural Sciences, Philadelphia*, vol. 71, November-December, 1919.

On Elphenor—a new genus of fishes from Japan: *Annals of the Carnegie Museum, Pittsburg*, vol. 12, December 15, 1919.

Pity the poor hermit. The effect of Japanese enterprise in Korea: *Sunset*, vol. 44, January, 1920.

Planted trout in the Platte drainage: *Copeia*, no. 81, April 15, 1920.

Re-spawning of Pacific salmon: *American Angler*, vol. 4, January-February, 1920.

Salmo formosanus—a new trout from the mountain streams of Formosa (with Masamitsu Oshima): *Proceedings of the Academy of Natural Sciences, Philadelphia*, vol. 71, April-October, 1919.

Some phases of the aftermath: *Sunset*, vol. 43, November, 1919.

Studies in ichthyology—a monographic review of the family of Atherinidae or Silversides (with C. L. Hubbs): *Leland Stanford Junior University Publications, University Series*, 1919.

The trout of the great west: *American Angler*, vol. 4, December, 1919.

The trout of the Rio Grande: *Copeia*, no. 85, August 18, 1920.

War and the League of Nations: *Sunset*, vol. 43, October, 1919.

When east meets east: *Sunset*, vol. 43, December, 1919.

Die wichtigste aufgabe: *De Menschheit*, January 7, 1920.

Zapataland: *Melbourne Socialist, Australia*, February 27, 1920.

RAY LYMAN WILBUR, President:

America's opportunity: City Club of Chicago, *City Club Bulletin*, vol. 13, June 14, 1920.

Fame of Stanford University spread far: *Pan-Pacific*, May, 1920.

Foreword: *Bulletin of California State Conference of Social Agencies*, vol. 3, April, 1920.

Foreword: Leland Stanford Junior University Library . . . *New building . . . and a history of the library, 1891-1919*: Stanford University, 1919.

Needs of Stanford University: *Stanford Illustrated Review*, vol. 21, October, 1919.

Remunerative extra-university activities: Association of American Universities: *Journal of Proceedings and Addresses of the 21st Annual Conference, November, 1919*; *School and Society*, vol. 11, January 24, 1920.

Report of section on public health: *Transactions of the Commonwealth Club of California*, vol. 14, February, 1920.

ANATOMY

ARTHUR WILLIAM MEYER:

The case and problem method in anatomic neurology: *Anatomical Record*, vol. 18, May 20, 1920.

Hydatiform degeneration in tubal and uterine pregnancy, Carnegie Institution of Washington: *Contributions to Embryology*, no. 40, Publication 272, 1920.

The practitioner's contribution to embryology: *California State Journal of Medicine*, vol. 18, February, 1920.

Supplement in osteology: Stanford University, 1919.

An unexcelled medium for the preservation of cadavers: *Science*, n. s., vol. 50, December 19, 1919.

EDGAR DAVIDSON CONGDON:

Acquired skeletal deformities in a young fowl: *Anatomical Record*, vol. 19, August, 1920.

The distribution and the origin of septa and walls of the sphenoid sinus: *ibid*, vol. 18, March, 1920.

APPLIED MATHEMATICS

LEANDER MILLER HOSKINS:

The strain of a gravitating sphere of variable density and elasticity: *Transactions of the American Mathematical Society*, vol. 21, January, 1920.

SIDNEY DEAN TOWNLEY:

Earthquakes on the Pacific Coast of North America: *Bulletin of the Seismological Society of America*, vol. 9, September, 1919.

Editor, *Bulletin of the Seismological Society of America*.

BACTERIOLOGY

EDWIN WILLIAM SCHULTZ:

A method for demonstrating *Spirocheta pallida* in regional lymph glands: *Journal of the American Medical Association*, vol. 75, July 17, 1920.

BOTANY

DOUGLAS HOUGHTON CAMPBELL:

Studies in some east Indian hepaticæ: *Calobryum Blumei* N. ab *e*: *Annals of Botany*, vol. 34, January, 1920.

GEORGE JAMES PEIRCE:

A demonstration: *School and Society*, vol. 11, March 20, 1920.

LEONAS LANCELOT BURLINGAME:

General biology and the junior college (with E. G. Martin): *Science*, n. s., vol. 51, May 7, 1920.

CHEMISTRY

JOHN MAXSON STILLMAN, Emeritus:

Address [at the dedication of Gilman Hall]: California University, *Semicentenary Celebration of the Founding of the University* . . . 1868-1918, Berkeley, 1919.

The history of Memorial Hall: *Stanford Illustrated Review*, vol. 21, October, 1919.

Paracelsus as a reformer in medicine: *Monist*, vol. 29, October, 1919.

The university library, 1891-1919: Leland Stanford Junior University. Library. *New building . . . and a history of the library, 1891-1919*: Stanford University, 1919.

ROBERT ECKLES SWAIN:

Studies on the blood of marine animals—I A chemical study of the blood of several invertebrate animals; II A chemical study of whale blood (with R. G. Myers. Ph. D. Thesis); *Journal of Biological Chemistry*, vol. 41, January, 1920.

EDWARD CURTIS FRANKLIN:

Benzene sulfonnitramide, toluene-4-sulfonnitramide-2-nitrotoluene-4-sulfonnitramide and some of their salts (with B. R. Mathews. Ph. D. Thesis): *Journal of Physical Chemistry*, vol. 24, February, 1920.

Metallic salts of pyrrol, indol and carbazol: *Journal of Physical Chemistry*, vol. 24, February, 1920.

ECONOMICS

MURRAY SHIPLEY WILDMAN:

The mechanism of inflation: *Transactions of the Commonwealth Club of California*, vol. 14, November, 1919.

ALBERT CONSER WHITAKER:

Foreign exchange. D. Appleton & Co., N. Y., 1919.

ELIOT JONES:

Is competition in industry ruinous: *Quarterly Journal of Economics*, vol. 34, May, 1920.

Report on the meat-packing industry: *American Economic Review*, vol. 9, December, 1919.

EDUCATION

ELLWOOD PATTERSON CUBBERLEY:

Editor of the Riverside Text-books in Education: (1) Showalter, N. D., Handbook for Rural School Officers, Houghton Mifflin Co., Boston, 1920; (2) Nutt, H. W., The Supervision of Instruction, Houghton Mifflin Co., Boston, 1920.

LEWIS MADISON Terman:

Abbreviated filing record card for the Stanford revision of the Binet-Simon intelligence tests: Houghton Mifflin Co., Boston, 1920.

Condensed guide for the Stanford revision of the Binet-Simon intelligence tests: Houghton Mifflin Co., Boston, 1920.

National intelligence tests with manual of direction (with others): World Book Co., Yonkers on Hudson, 1920.

Research and the problems of educational readjustment (editorial): *Journal of Educational Research*, vol. 1, February, 1920.

Terman group test of mental ability for grades 7-12, scoring key and manual of directions with examination and charts: World Book Co., Yonkers on Hudson, 1920.

The use of intelligence tests in the grading of school children: *Journal of Educational Research*, vol. 1, January, 1920.

Associate editor, *Journal of Educational Research*.

PERCY ERWIN DAVIDSON:

German language legislation and the spirit of American education: *School and Society*, vol. 11, March 13, 1920.

JESSE BRUNDAGE SEARS:

The Boise survey, a concrete study of the administration of a city school (with others); World Book Co., Yonkers, N. Y., 1920.

Report on a proposed policy for the trustees of the Preston School of Industry. Preston School of Industry, Waterman, Calif., 1919.

WILLIAM MARTIN PROCTOR:

The Boise survey (with J. B. Sears and J. Harold Williams): World Book Co., Yonkers on Hudson, 1920.

Mental tests in the vocational advisement of high school pupils: Proceedings of the California High School Teachers' Association: *Sierra Educational News*, vol. 16, August, 1920.

Psychological tests as a means of measuring the probable school success of high school pupils: *Journal of Educational Research*, vol. 1, April, 1920.

Psychological tests in the educational guidance of high school pupils: *Journal of Educational Research*, vol. 1, May, 1920.

ENGINEERING

CHARLES DAVID MARX:

Address of the delegate from Leland Stanford University; California University: *Semicentenary Celebration of the Founding of the University . . . 1868-1918*, Berkeley, 1919.

ELECTRICAL ENGINEERING

HARRIS J. RYAN:

Researches on high voltage insulation: *Electrical World*, vol. 75, January 31, 1920.

Suspension insulator research: *Report of the Overhead Sections Committee of the National Electric Light Association . . . Advance*

copy prepared for presentation at 43d convention, Pasadena, May 18-22, 1920.

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HENRY HARRISON HENLINE:

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ENGLISH

RAYMOND MACDONALD ALDEN:

Articles: The essay; Letter writers; Literary forms; Poetry; Lyric poetry; Narrative poetry; Shakespeare's sonnets; Tottel's miscellany: *Encyclopedia Americana*, N. Y., 1918-20.

English drama from the Restoration to the Victorian era [a study list]: *Drama*, vol. 10, December, 1919.

The lyrical conceits of the "Metaphysical poets": *Studies in Philology*, vol. 17, April, 1920.

The smoked-up profs: *Stanford Illustrated Review*, vol. 21, January, 1920.

Sonnet "In Memoriam W. E. Chapman": *Alumni Register, University of Pennsylvania*, vol. 22, February, 1920.

JOHN S. P. TATLOCK:

Intercollegiate athletics at present: *Stanford Cardinal*, vol. 29, February, 1920.

Never less alone than when alone: *Modern Language Notes*, vol. 34, November, 1919.

Purgatorio XI, 2-3 and Paradiso XIV, 30: *Romanic Review*, vol. 10, July-September, 1919.

HENRY DAVID GRAY:

Did Shakespeare write a tragedy of Dido?: *Modern Language Review*, vol. 15, July, 1920.

Dramatic history repeats itself: *Freeman*, vol. 1, August 25, 1920.

A letter of protest: *ibid.*, vol. 1, June 30, 1920.

Russian drama in New York: *ibid.*, vol. 1, May 12, 1920.

The sources of the tempest: *Modern Language Notes*, vol. 35, June, 1920.

Three plays from Provincetown: *Freeman*, vol. 1, June 9, 1920.

The Titus Andronicus problem: *Studies in Philology*, vol. 17, April, 1920.

FRANCES THERESA RUSSELL:

Satire in the Victorian novel: Macmillan, N. Y., 1920.

ARTHUR GARFIELD KENNEDY:

The modern English verb—adverb combination: *Stanford University Publications, University Series, Language and Literature*, vol. 1, no. 1, 1920.

ENTOMOLOGY AND BIONOMICS

VERNON LYMAN KELLOGG:

Discussion of S. R. Angell, Organization of Research: Association of American universities, *Journal of Proceedings and Addresses of the 21st Annual Conference*, November, 1919.

Herbert Hoover, the man and his work: Appleton, N. Y., 1920.

The story of Hoover: *Everybody's*, vol. 42, February-June, 1920.

Washington five and eight o'clocks: *Yale Review*, n. s., vol. 9, April, 1920.

Editor science and national progress (with others): *Scientific American Monthly*, 1920.

GORDON FLOYD FERRIS:

Anoplura of the Canadian Arctic expedition, 1913-18: *Report of the Canadian Arctic Expedition*, vol. 3, Ottawa, 1919.

Contributions toward a monograph of the suckling lice: *Leland Stanford Junior University Publications, University Series*, 1920.

The first stage larva of *Cuterebra americana* (Fabr.); (Diptera; Oestridæ): *Psyche*, vol. 27, February, 1920.

A new species of *Pseudodiaspis* (Hemiptera; Coccidæ): *Entomological News*, vol. 30, December, 1919.

Notes on Coccidæ, IV, V, VI (Hemiptera): *Canadian Entomologist*, vol. 51, November, 1919; vol. 52, February-March, 1920.

Scale insects of the Santa Cruz peninsula: *Stanford University Publications, University Series, Biological Sciences*, vol. 1, no. 1, 1920.

Some records of Polycetenidæ (Hemiptera): *Journal of the New York Entomological Society*, vol. 27, December, 1919.

Why not government maintained fellowships?: *Science*, n. s., vol. 50, December 12, 1919.

GEOLOGY

JOHN CASPER BRANNER, Emeritus:

Resumo da geologia do Brasil para acomphar a mappa geologico do Brasil: *O Estudante Brasileiro*, vol. 1, April, 1920.

JAMES PERRIN SMITH:

Climatic relations of the tertiary and quaternary faunas of the California region: *Proceedings of the California Academy of Science*, ser. 4, vol. 9, 1919.

AUSTIN FLINT ROGERS:

An interesting occurrence of manganese minerals near San Jose, California: *American Journal of Science*, vol. 48, December, 1919.

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GREEK

AUGUSTUS TABER MURRAY:

Translator, Homer. The Odyssey . . . Loeb classical library. 2 vol. —, Heinemann, London, G. P. Putnams Sons, N. Y., 1919.

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EPHRAIM DOUGLASS ADAMS:

Review of Anglo-American problems: *American Historical Review*, vol. 25, July, 1920.

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The foundations of American policy in the Far East: California University, *Semicentenary of the founding of the university with . . . the Conference on international relations*, Berkeley, 1919.

How we can help China: *Overland Monthly*, vol. 74, December, 1919.

The Japanese in California: *American Review of Reviews*, vol. 61, January, 1920.

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The Shantung issue: *Journal of International Relations*, vol. 10, January, 1920.

PERCY ALVIN MARTIN:

Four years of socialistic government in Yucatan: *Journal of International Relations*, vol. 10, October, 1919.

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Practical Pan-Americanism: *Stanford Cardinal*, vol. 29, March, 1920.

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YAMATO ICHIHASHI:

Address: California University, *Semicentenary of the founding of the university with . . . the Conference on international relations*, Berkeley, 1919.

REGINALD GEORGE TROTTER:

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HENRY RUSHTON FAIRCLOUGH:

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BENJAMIN OLIVER FOSTER:

Translator, *Livy . . .*, vol. 1, Books I-II. Loeb classical library, Heinemann, London, G. P. Putnam's Sons, N. Y., 1919.

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CHESTER GARFIELD VERNIER:

Judicial decisions on criminal law and procedure (with W. G. Hale): *Journal of the American Institute of Criminal Law and Criminology*, vol. 10, November, 1919; vol. 11, May-August, 1920.

Assistant editor, *Journal of the American Institute of Criminal Law and Criminology*.

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GEORGE THOMAS CLARK:

From the librarian's point of view: Leland Stanford Junior University Library. *New building . . . and a history of the library, 1891-1919*: Stanford University, 1919.

A letter [from Japan]: *News Notes of California Libraries*, vol. 15, April, 1920.

The new Stanford library: *Stanford Illustrated Review*, vol. 21, October, 1919.

FLORENCE CRAIG:

The education of librarians, a fantasy: *Library Journal*, vol. 44, September, 1919.

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WILLIAM FREDERICK DURAND:

Experimental research on air propellers (with E. P. Lesley) II: National Advisory Committee for Aeronautics: *Report 30*, November, 1919; *Fourth Annual Report*, 1918, Washington, 1920; *III Report 64*, Washington, 1920.

Hydraulics of oil pipe lines: *Journal of Electricity*, vol. 44, May 1, 1920.

Shock of water ram in pipe lines with imperfect reflection at the discharge end and including change of valve opening. Abstract: *Proceedings of the National Academy of Sciences*, vol. 6, July, 1920.

GUIDO HUGO MARX:

An engineer's acid test of patriotism: *Standard*, vol. 6, May, 1920.

EVERETT PARKER LESLEY:

Experimental research on air propellers (with W. F. Durand) II: National Advisory Committee for Aeronautics, *Report 30*, November, 1919; *Fourth Annual Report*, Washington, 1920; *III Report 64*, Washington, 1920.

ROBERT HENRY HARCOURT:

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EMMET RIXFORD:

Concerning osteopathy: *California State Journal of Medicine*, vol. 18, June, 1920.

Failure of the primary rotation of the intestine (left-sided colon) in relation to intestinal obstruction: *Annals of Surgery*, vol. 72, July, 1920.

ALFRED BAKER SPALDING:

Cystic teratoma of the ovary with carcinoma: *American Journal of Obstetrics and Diseases of Women and Children*, vol. 80, November 4, 1919; Leland Stanford Junior University. Department of Medicine: *Medical Bulletin*, no. 6, 1918-20.

Study of frozen sections of the pelvis with description of an operation for pelvic prolapse: *Surgery, Gynecology and Obstetrics*, December, 1919; Leland Stanford Junior University. Department of Medicine: *Medical Bulletin*, no. 6, 1918-20.

FRANK ELLSWORTH BLAISDELL:

Studies in Alaudes (Coleoptera; Tenebrionidae): *Transactions of the American Entomological Society*, vol. 45, November 22, 1919.

Surgical pathology of the seminal vesicles (with J. R. Dillon): *California State Journal of Medicine*, vol. 18, May, 1920.

Synopsis and review of the species of Coelus (Coleoptera; Tenebrionidae): *Transactions of the American Entomological Society*, vol. 45, November 24, 1919.

ERNEST CHARLES DICKSON:

Botulism: *California State Journal of Medicine*, vol. 18, February, 1920.

Botulism, preliminary report of a study of the antitoxin of *Bacillus botulinus* (with B. M. Howitt): *Journal of the American Medical Association*, vol. 74, March 13, 1920.

A study of the resistance of the spores of *Bacillus botulinus* to various sterilizing agencies which are commonly employed in the canning of fruits and vegetables with (E. C. Dickson, G. S. Burke, and E. S. Ward: *Archives of Internal Medicine*, vol. 24, December, 1919; Leland Stanford Junior University. Department of Medicine: *Medical Bulletin*, no. 6, 1918-20.

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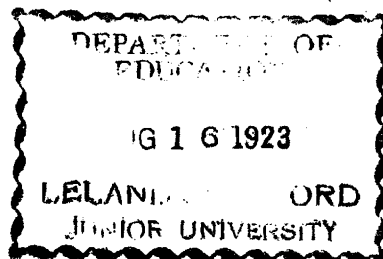
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LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS
1921 TRUSTEES' SERIES No. 37

ANNUAL REPORT OF THE PRESIDENT OF STANFORD UNIVERSITY

FOR THE THIRTIETH ACADEMIC YEAR
ENDING AUGUST 31, 1921

THIS BEING THE EIGHTEENTH REPORT SUBMITTED, TO WHICH
ARE APPENDED THE ANNUAL REPORTS OF THE
TREASURER AND COMPTROLLER

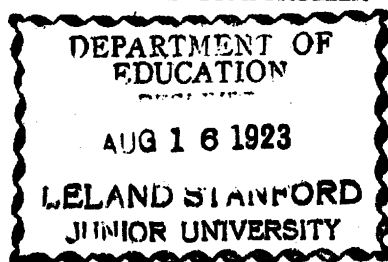


STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
1921

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STANFORD UNIVERSITY PUBLICATIONS
TRUSTEES' SERIES

NO.	DATE
1. The Leland Stanford Junior University. A pamphlet of information	(No date)
2. Address of Jane Lathrop Stanford to the Board of Trustees	February 11, 1897
3. Address of Jane Lathrop Stanford to the Board of Trustees	June 1, 1897
4. Address of Jane Lathrop Stanford to the Board of Trustees	May 31, 1899
5. Address of Jane Lathrop Stanford to the Board of Trustees	October 3, 1902
6. Address on "The Right of Free Speech," by Jane Lathrop Stanford to the Board of Trustees	April 25, 1903
7. Petition filed in proceedings to establish and construe University Trusts	June 16, 1903
8. Decree in proceedings to establish and construe University Trusts	July 3, 1903
9. Inaugural address of Jane Lathrop Stanford as President of the Board of Trustees	July 6, 1903
10. Organization of the Faculty of the University	March 31, 1904
11. Report of the Organization Committee of the Trustees upon the Organization of the University Faculty	March 31, 1904
12. First Annual Report of the President	December 31, 1905
13. Second Annual Report of the President	April 30, 1906
14. Third Annual Report of the President	December 31, 1906
15. Fourth Annual Report of the President	December 31, 1907
16. Trustees' Manual	November 1, 1908
17. Fifth Annual Report of the President	December 31, 1908
18. Sixth Annual Report of the President	December 31, 1909
19. Seventh Annual Report of the President	December 31, 1910
20. Eighth Annual Report of the President	December 31, 1911
21. Ninth Annual Report of the President	December 31, 1912
22. Addresses of Timothy Hopkins, Emmet Rixford, and David Starr Jordan at the Dedication of the Lane Medical Library Building	January 1, 1913
23. Tenth Annual Report of the President	July 31, 1913
24. Addresses at the installation of John Casper Branner, LL. D., as President of the University	October 1, 1913
25. The Perfecting of the Promise, a sermon by Rev. Francis G. Peabody, D. D., March 1, 1914, commemorating the ninth anniversary of the death of Jane Lathrop Stanford; The Founders of the University, an address by Hon. William W. Morrow, LL. D., Founders' Day, March 9, 1914	July 31, 1914
26. Eleventh Annual Report of the President	October 30, 1914
27. The Foundation Ideals of Stanford University, an address by Chancellor David Starr Jordan, LL. D., on March 9, 1915	June 1, 1915
28. Trustees' Manual (2d edition)	August 1, 1915
29. Twelfth Annual Report of the President	December 3, 1915
30. Addresses at the Installation of Ray Lyman Wilbur, M. D., as President of the University	January 22, 1916
31. Thirteenth Annual Report of the President	December 31, 1916
32. Fourteenth Annual Report of the President	December 1, 1917
33. Fifteenth Annual Report of the President	December 1, 1918
34. Sixteenth Annual Report of the President	December 31, 1919
35. Trustees' Manual (3d edition)	August 1, 1920
36. Seventeenth Annual Report of the President	December 31, 1920
37. Eighteenth Annual Report of the President	December 31, 1921

TABLE OF CONTENTS

	PAGE
BUILDINGS	5
BASKETBALL PAVILION	5
STANFORD WAR SERVICE MEMORIAL	6
STADIUM	6
STANFORD HONOR ROLL	7
FOOD RESEARCH INSTITUTE	7
THOMAS WELTON STANFORD FUND	9
HOOVER WAR LIBRARY	10
MAUSOLEUM LOT	10
DEAN OF WOMEN	10
FACULTY HOUSING	11
FIELD ARTILLERY, R. O. T. C.	13
HOPKINS MARINE STATION	13
STANFORD HOME FOR CONVALESCENT CHILDREN	14
PENINSULA HOSPITAL AND STUDENTS' GUILD	14
APPOINTMENT OF MR. FRANCIS W. HIRST	15
REVISION OF THE ARTICLES OF ORGANIZATION OF THE FACULTY OF THE MEDICAL SCHOOL	16
SUPERINTENDENT OF NURSES	19
SOCIAL SERVICE DEPARTMENT	19
CHARLES N. FELTON, JR., LEGACY AND SPECIAL HOSPITAL ENDOW- MENT FUNDS	19
FINANCIAL NEEDS	20
Student Housing	21
Faculty Housing	21
PENSION PLAN	26
ENDOWMENT COMMITTEE	27
PROBLEMS OF THE ENDOWED UNIVERSITY	27
FACULTY:	
Absences	38
Resignations	39
Promotions	39
New Appointments	39
Deaths	40
SUMMER QUARTER	42
Summer Quarter Appointments	42
STUDENTS:	
Attendance	43
Revision of Entrance Requirements	44
Regional Scholarships	47
Changes in Student Probation	48
Intelligence Tests	50
Honor System	51
Tuition	52
Tuition Notes	52
Fee Schedule	53
GIFTS	53
REPORT OF THE TREASURER	54
REPORT OF THE COMPTROLLER	82

APPENDICES

I. GIFTS TO THE UNIVERSITY	127
II. DEPARTMENTAL REPORTS:	
Anatomy	133
Applied Mathematics	134
Bacteriology and Experimental Pathology	134

CONTENTS

	PAGE
Botany	135
Chemistry	137
Civil Engineering	139
Economics	140
Education	140
Graphic Art	144
Electrical Engineering	144
English	146
Geology	149
Germanic Languages	150
Greek	151
History	152
Hopkins Marine Station	155
Latin	157
Law	158
Mathematics	159
Mechanical Engineering	160
Medical School	161
Stanford Hospitals	163
Palo Alto Hospital	167
Medicine	168
Obstetrics and Gynecology	173
Pathology	175
Pharmacology	176
Surgery	176
Military Science and Tactics	179
Mining and Metallurgy	180
Philosophy	181
Physical Education for Men	181
Physical Education for Women	192
Physics	194
Physiology	196
Report of Committee on General Biology	198
Political Science	199
Psychology	200
Romanic Languages	201
Zoology	202
Entomology and Bionomics	204
III. COMMITTEE REPORTS :	
Athletics	207
Board of Athletic Control	207
Women's Athletics	211
Lower Division Administration	212
Public Exercises	214
Public Health	218
Research	218
Scholarship	219
Loans	226
Student Affairs	226
Vocational Guidance	227
IV. ADMINISTRATIVE REPORTS :	
Librarian	229
Dean of Men	235
Dean of Women	241
Alumni Secretary	247
Appointment Secretary	248
University Chaplain	258
Organist	261
Curator of Museum and Art Gallery	262
Registrar	264
V. PUBLICATIONS OF THE FACULTY	289

PRESIDENT'S REPORT

TO THE HONORABLE BOARD OF TRUSTEES:

Gentlemen: Herewith is submitted my report as President of the University for the academic year 1920-21.

BUILDINGS

Although delayed to some extent by the builders' strike, the Nurses' Home is now nearing completion and will probably be ready for occupancy early in January. It will offer modern and satisfactory housing for the Stanford School of Nursing and will permit economies in the management of the Stanford Hospitals.

The new Stanford Union, made possible largely through an anonymous gift of \$100,000.00, which will furnish housing accommodations for about one hundred men and dining facilities for three hundred and fifty, will also be ready in January.

BASKET BALL PAVILION

The construction of the Basket Ball Pavilion at a cost of nearly \$100,000.00, has proceeded far enough so that it is evident that it will fit admirably into the group of buildings made up of Encina Gymnasium and Encina Hall. It will be a distinct contribution to the campus. It replaces for us the features that Mrs. Stanford embodied in the gymnasium, which she built and which was partially destroyed by the earthquake. It will permit of large indoor audiences and will become a center for student dances and activities of that sort.

Its erection is based upon an entirely new scheme of finance for Stanford University. For the first time the students came forward and by popular election determined that they would assess themselves \$1.00 each per quarter until they were able to pay one-third of the cost of the building. The Board of Athletic Control contributes one-third from its net proceeds from athletic games, and the other one-third is contributed by the President and Comptroller from savings made in one way or another throughout the University.

THE STANFORD WAR SERVICE MEMORIAL

I submit herewith the report of Professor Emeritus John Maxson Stillman, chairman of the committee in charge of collecting funds for the Stanford War Service Memorial.

"Since the last report the campaign for the funds for the Stanford War Service Memorial Building has progressed, though not rapidly. This was to be anticipated in view of the energetic campaign for the Stadium.

"Since the date of the last report and to December 31, 1921, subscriptions increased by about \$20,000, giving a total of.....\$100,324.99

Total receipts on subscriptions.....	\$39,421.30
Total receipts from interest on bonds and savings.....	3,096.99
	<hr/>
	\$42,518.29
Total expenses of campaign to date.....	2,875.02
	<hr/>
Balance.....	\$39,643.27

"To assist in coöperation with the plans of the Stadium Committee the Executive Committee of the Memorial Fund decided, with the approval of the President and formal endorsement by the Board of Trustees, to permit subscribers who so desired to make payments of subscriptions directly to the Stadium Fund, specifying that such payments were to be repaid to the Memorial Fund at a later date. Payments of this character unofficially reported by the Stadium Fund to date amount to \$14,346.00. The committee hopes within the next two years, the time originally set for completed payments of subscriptions, to attain the sum of \$150,000 for this building as originally announced by the committee."

STADIUM

By resolution of the Board of Trustees under date of November 26, 1920, the site of the Stanford Stadium was selected to the east of the Arboretum and near the State Highway. Rapid progress is now being made in its construction. We anticipate that it will be completed for the intercollegiate football game with the University of California on November 19th, and that it will set a new example in university stadia by its simplicity, safety, natural beauty, and because of its comparatively low cost.* It is expected that \$200,000.00, of which about one-half will come from subscriptions, will build a stadium for 60,000 spectators, and that the \$100,000.00 subscribed will be returned later to the University for various purposes from admission fees.

* These hopes have been fully realized. The annual California-Stanford game was held in the new Stadium on November 19, 1921.—(Dec. 31, 1921.)

STANFORD HONOR ROLL

The following names have been added to the Stanford Roll of Honor: Cherrill Roach Betterton, ex-'17; Arthur Edwin Johnson, ex-'18; Egbert Heber Pierson, '15.

The total number of Stanford men and women in war service as now determined was 3,393, of whom 77 lost their lives.

FOOD RESEARCH INSTITUTE

During the year the final plans for the organization of the Food Research Institute of Stanford University have been consummated. The general terms of this gift are as follows:

This Agreement, Between LELAND STANFORD JUNIOR UNIVERSITY (hereinafter called the "University"), and CARNEGIE CORPORATION OF NEW YORK (hereinafter called the "Corporation"), witnesseth that

WHEREAS, The parties hereto desire to establish an institute for the study of the problems of the production, distribution and consumption of food-stuffs;

Now, Therefore: In consideration of the mutual promises herein contained,

I. The University agrees:

(1) To establish at the University a research organization under the name of The Food Research Institute of Leland Stanford Junior University (hereinafter referred to as the "Institute") to study the problems of the production, distribution and consumption of food-stuffs.

(2) To appoint, with the advice and consent of the Corporation, three men of science to be known as the "Directors" of the Institute.

(3) The Directors shall have authority to determine the scientific policies of the Institute and the problems to be studied and to recommend to the Trustees of the University the specific purposes for which the funds available for the support of the Institute shall be expended, and shall carry on and conduct the researches of the Institute; they shall make their determinations in consultation with the Advisory Committee hereinafter provided for; they shall act as a Board and shall conduct the researches of the Institute in coöperation, each with the others; each of them shall be constituted a professor of the University during his term of office as Director, but any teaching in the University shall be subordinated to his primary duty as a Director of the researches of the Institute. One of the Directors shall be designated by the University as Secretary of the Institute and be charged with the general administration of the Institute.

The University further agrees:

(4) That it will, with the advice and consent of the Corporation,

appoint, to fill any vacancy which occurs in the Committee of Directors, a new Director, with the same rights and obligations as an original Director.

(5) That it will, with the advice and consent of the Corporation, appoint not more than seven persons, who, with the President of the University ex officio, and the President of the Corporation ex officio, shall constitute an Advisory Committee of not more than nine persons, each member of which shall serve for the term of three years from the date of his appointment.

(6) That it will, with the advice and consent of the Corporation, appoint new members of the Advisory Committee to fill any vacancies in that Committee, whether arising by expiration of term or otherwise, when it deems the filling of such vacancies desirable.

(7) That it will furnish to the Institute, free of charge, housing, lighting, heating, and janitorial service at the University, and will open to the Institute, for the purpose of its researches, the libraries and scientific laboratories of the University.

(8) That the University will disburse, for the support of the Institute, according to the direction of the Directors, the sums received, as herein-after provided, from the Corporation.

II. The Corporation agrees to make payments to the University as follows:

During the period of one year beginning July 1, 1921, for the maintenance of the Institute during that period, Fifty-four Thousand Dollars (\$54,000) or so much thereof as may be required for such purpose.

During the period of one year beginning July 1, 1922, for the maintenance of the Institute during that period, Sixty-six Thousand Dollars (\$66,000), or so much thereof as may be required for such purpose.

During each one of the eight periods of one year beginning respectively on the first days of July in the years 1923, 1924, 1925, 1926, 1927, 1928, 1929 and 1930, for the maintenance of the Institute during such period, the sum of Seventy-three Thousand Dollars (\$73,000), or so much thereof as may be required for such purpose.

Two years before the expiration of this Agreement, Carnegie Corporation will confer with the Trustees of Leland Stanford Junior University upon, and determine the continuance or discontinuance of, the activities of the Institute and the support thereof by the Corporation after the termination of the ten year period. Unless renewed or extended, this contract shall terminate ten years from its date.

A statement by the President of the Corporation is hereunto annexed. It is not made a part hereof, nor is it to affect the construction hereof. It is referred to by way of recital, for the purpose of showing the general plan and intent of the parties.

IN WITNESS WHEREOF, The parties hereto have caused their corporate names to be hereunto subscribed by their respective Presidents,

of these funds is to be used for psychology or psychical research. Already the University has begun operations under this gift. An appropriation of \$4000 has been made from the general income of the University to be repaid later from the income of these special funds.

HOOVER WAR LIBRARY

During the year the library has grown steadily in importance and volume, especially noteworthy being the materials secured by Mr. Golder in Baltic and Balkan countries. In July various archives and collections made for the Food Research Institute began to arrive, and these are being merged with the Hoover War Library. In August a first Report was issued in pamphlet form setting forth the inception of the library and giving an account of its development and progress up to the end of March, 1921. This report analyzes the main groups of materials already secured and sufficiently organized to permit of use by qualified research students, but thorough cataloguing has not yet been started, and when undertaken will be the work of years.

MAUSOLEUM LOT

Constant improvements are being made in the Arboretum. Its scientific value and natural beauty are increasing. In particular the planting around the Mausoleum has grown to be unusually attractive. In order to protect for all time the grounds about the Mausoleum and following the request of the Founders, your Honorable Board at the meeting of September 24, 1920, passed the following resolution:

That in conformity with that clause in the Founding Grant reading as follows: "The Trustees shall lay off on the Palo Alto Farm a lot of about ten acres, and suitably improve and maintain the same forever as a place of burial and of last rest on earth for the bodies of the grantors and of their son, Leland Stanford, Junior," not less than ten acres adjoining the mausoleum be formally set aside and that the Comptroller be authorized and instructed to see that it is done.

DEAN OF WOMEN

Miss Harriet Bradford, Dean of Women, has resigned after five years of constructive and unselfish service. Miss Mary Yost, Assistant Professor of English at Vassar, has been chosen as her successor. Miss Yost has also been appointed as Associate Professor of English and will take part in instruction in English and

as a member of the Academic Council will be on the Committee on Lower Division, in order to assist in arranging the courses taken by the women entering the University.

FACULTY HOUSING

In connection with the faculty housing scheme it has been thought wise for the University to change its policy in the erection of buildings to be rented to members of the faculty and instead to assist members of the faculty to buy or build their homes. In accordance with this the following resolution was passed by the Board on December 24, 1920:

That all dwelling houses owned by the University and situate on the campus, except fraternity and sorority houses, President's and Comptroller's houses, and foremen's cottages, and the following houses: Nos. 1-9 inclusive and Nos. 13-14 Alvarado; Nos. 1, 2, 3, 5, 7, and 9 Salvatierra; and No. 1 Lasuen, together with the lots on which such houses are situate, be offered for lease to members of the faculty on the following terms:

That the present occupants be given option to buy the houses and lease the lots occupied by them for a period of twenty years, with an option to renew for two additional successive terms of twenty years each for an annual ground rental of fifty dollars (\$50) payable annually in advance on the first day of August, and in addition thereto, a total sum equal to the book value of said houses after allowing depreciation as of the date of August 31, 1920. Such additional sum to be paid in equal monthly instalments over a period of twenty years with interest on deferred payments at the rate of $4\frac{1}{2}\%$.

That this option be open until April 1, 1921, after which time, such houses be offered to other members of the faculty on the same terms, subject to present leases.

Lessees to have right to sell their leasehold interests with the approval of the Board, but faculty members to have first option to purchase.

The funds resulting from these sales and other funds from income, totaling \$250,000.00, have been set aside as a loan fund, without interest, to be known as the Faculty Housing Fund.*

The majority of the faculty are now purchasing their homes at the actual values stipulated in the books of the University, which have been depreciated a certain amount each year from the original cost. It has been the policy of the University not to increase the rental charges to either faculty or students during the housing shortage of the war period. This has kept our in-

* For details cf. letter of President Wilbur, page 22.

come from these sources down, but has been an important policy, particularly since we have been unable to adequately increase salaries. Several members of the faculty now have houses under construction under the Faculty Housing Plan.

Because of the marked demand for houses beyond the possibilities of the Faculty Housing Fund the following resolution of the Board of August 26, 1921, is of special interest:

That the University loan to faculty members, for a term of not exceeding fifteen years, 90% of the cost of houses to be erected by them, in amount not to exceed \$15,000 in each case; the loans to bear interest at 6% and the total not to exceed \$60,000.00, and to be made when and as funds are available.

The present status of the subject of faculty housing is indicated by the report of the Housing Committee composed of Trustees Hopkins and Cutler, Professors Cubberley and Swain, and Comptroller Roth, under date of May 5, 1921:

TO THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY,
AND THE PRESIDENT OF THE UNIVERSITY:

The Directors of the Faculty Housing Fund herewith respectfully submit the following report and recommendations for your consideration:

The Comptroller of the University reports that pursuant to your resolution, existing houses on the Campus of a total valuation of approximately \$180,000 have been sold to members of the faculty and will be charged against the Faculty Housing Fund of \$250,000, heretofore set up. This will leave a book balance of approximately \$70,000 for the construction of new houses to be expended as and when the balance of said fund becomes available and loans are approved.

Payments on account of the purchase price of existing houses are to be credited to the Faculty Housing Fund as they are collected, and will be available for the construction of new houses. It is estimated that the sum to be obtained from this source for the fiscal year 1920-21, will be approximately \$5,000, and that during the next ten years the sum of approximately \$13,000 will become available annually from such payments and repayments of loans hereafter to be made.

A total of 23 applications in an aggregate amount of approximately \$325,000 for loans from the Faculty Housing Fund have been filed with this Board of Directors.

A number of applicants are now accommodated on the Campus in houses which have been purchased from the University under the plan for the sale of existing houses.

This Board recommends that priority in granting applications for loans be based on faculty rank, such rank to be determined by the President of the University, with such exceptions as may be necessary to fulfill present contractual obligations, or to subserve the University's best interests in

the future; and further recommends that at least the first two loans be granted to present members of the faculty.

This Board further recommends that the balance remaining in said endowment fund be loaned to members of the faculty for the construction of new houses as soon as funds become available for such purpose.

It appears that there is an imperative need for further faculty housing accommodations on the Campus, and the construction at an early date of three or four houses under the Faculty Housing Plan, with priority of loans based upon rank, will greatly relieve the situation.

Respectfully submitted,

DIRECTORS OF THE FACULTY HOUSING FUND.

By ROBERT E. SWAIN, Acting Chairman.

A. E. ROTH, Secretary.

FIELD ARTILLERY, R. O. T. C.

Military Training at Stanford is now confined to the Field Artillery Unit. It was not found profitable to continue the Infantry Unit with the small numbers making up the unit. Under Major Collins there has been a marked advance in the development of Military Training at Stanford. The large equipment supplied by the United States Government is housed in the temporary buildings near Encina Gymnasium. Some ninety horses are available. Polo has become one of the university sports and has been played on a field east of Encina. A new field is being developed on the campus near the State Highway and the Pumping Station. We have ideal conditions for the handling of field drills and the general operations of an Artillery Unit.

HOPKINS MARINE STATION

The summer quarter at the Hopkins Marine Station was unusually successful. There have also been a number of scientific workers from different parts of the country working at the Station. In order to maintain the coast line and to protect the Station from the encroachment of business enterprises that threatened to interfere with its present isolation and future development, three acres of land between the Station holdings and the railroad were purchased during the year so that we now control the whole of China Point and its coast line. This gives us one of the most fortunate opportunities anywhere for a marine station. With the increasing interest taken in the economic side of sea life it is inevitable that this Station will prove of the greatest value to the University and to the State.

STANFORD HOME FOR CONVALESCENT CHILDREN

The Stanford Home for Convalescent Children, located in that portion of the Stanford residence still intact, has gained many friends during its short life. It is largely supported by contributions from the campus and Palo Alto community. The students of the University have adopted it and have arranged for an annual Labor Day to clear up its grounds.

Mrs. Timothy Hopkins has constantly continued her campaign for a permanent endowment and has collected some \$60,000. This endowment fund, which is still growing, means the permanent establishment of a personal memorial to Mrs. Stanford of a character that we feel sure would have been unusually satisfactory to her.

PENINSULA HOSPITAL AND STUDENTS' GUILD

For many years a group of physicians in Palo Alto and others interested in public welfare have operated there a private hospital known as the Peninsula Hospital, which has been of great benefit to the members of our faculty and to the students. Through the Students' Guild we have had constant association with this institution. Due to the unusual hospital problems associated with the war and the legislation regarding nurses, it began to lose ground. After consultation with the University authorities, the Town Trustees of Palo Alto held a special bond election and purchased the hospital, which is now known as the Palo Alto Hospital, and which will be operated under the general control of the management of the Physician Superintendent of the Stanford Hospitals and the University Comptroller. We anticipate that in this way we can continue to provide high grade hospital service for the members of the University, serve the Palo Alto community and, without expense to the University, set a higher standard in this direction.

For many years the Students' Guild has provided the means of caring for sick and needy students. With the strain incident to the war its management largely devolved upon Professor J. P. Mitchell, whose services were as invaluable as they were self-sacrificing. It has been determined to place the actual business responsibility of the Guild upon the Comptroller of the University, the University assuming the assets and liabilities of the Guild. The assets include the Isolation Hospital and certain funds which

are carried as a reserve for emergencies. The immediate policy of the Guild will be determined by a committee made up as follows: Mr. A. E. Roth, chairman; Professor J. P. Mitchell, Dr. C. D. Mosher, and Dr. A. D. Browne, in accordance with the following action of the Board of Trustees under date of August 26, 1921:

That the recommendations as to the management of the Students' Guild, as outlined in the following letter of the President of the University of August 5, 1921, be adopted:

1. That the Students' Guild transfer its property to the Board of Trustees of the University and that this property be accepted by the Board.

2. That the University assume the duties of providing hospital facilities for the students under a plan similar to that which the Guild has been following, which makes it possible for a portion of the hospital bills to be paid by the Students' Guild. The rules and regulations are herewith attached.

3. That the Comptroller's Office collect the Guild fee as heretofore and set it up as a special fund known as the Students' Hospital Fund, all expenditures from this Fund being under the direction of the University Comptroller.

4. That a committee be formed known as the Students' Hospital Committee, consisting of the Comptroller of the University and at least three members of the University Public Health Committee. This Committee will have general charge of the expenditures from the Students' Hospital Fund.

5. That the general duties of the Committee be the same as those now assigned to the officers of the Students' Guild, i. e., the provision of care for students in times of sickness, and provision for the general health of the university community.

APPOINTMENT OF MR. FRANCIS W. HIRST

A new precedent was established during the year by the combined appointment as Lecturer by Stanford and the University of California of Mr. Francis W. Hirst, a celebrated British economist. Mr. Hirst has offered courses in the Stanford summer quarter, and during the autumn quarter will continue offering courses and lectures both at Stanford and the University of California. He has already been a source of much intellectual stimulation in the community. In our somewhat isolated position here on the Pacific Coast it will be of great advantage if the two universities can divide the expense of bringing to California men of intellectual prominence from time to time.

REVISION OF THE ARTICLES OF ORGANIZATION OF THE FACULTY
OF THE MEDICAL SCHOOL

The following revision of the Articles of Organization of the Faculty of the Medical School was adopted by the Board of Trustees on June 24, 1921.

ARTICLE I.

THE FACULTY.

Section I. The Faculty of the Medical School of Leland Stanford Junior University shall consist of the Professors, Clinical Professors, Associate Professors, Associate Clinical Professors, Assistant Professors, Assistant Clinical Professors, Instructors and Clinical Instructors of the several departments. Voting members of the Faculty shall be as follows: Members of the Academic Council, Clinical Professors and Associate Clinical Professors.

Section II. Professors, Associate Professors, Assistant Professors and Instructors are those members of the Medical Faculty who give practically full time to University duties and who receive salaries from the University on this basis.

Section III. Clinical Professors, Associate Clinical Professors, Assistant Clinical Professors and Clinical Instructors are primarily engaged in practice. They hold equal rank in the Medical Faculty with Professors, Associate Professors, Assistant Professors and Instructors, respectively, except that members of this group are not members of the Academic Council.

Section IV. The Medical Faculty shall meet at least once a quarter and otherwise at the call of the presiding officer or of five members.

Section V. The business of the Medical Faculty shall be carried on in accordance with Robert's Rules of Order.

ARTICLE II.

OFFICERS.

Section I. The Dean of the Medical School shall be appointed by the President. He shall be the executive officer of the faculty, shall preside at the meetings of the Medical Faculty, shall represent the Medical School in its official relations, and shall in San Francisco represent the office of the Registrar of the University.

Section II. The Secretary of the Faculty shall be appointed by the President on recommendation of the Dean. He shall keep the minutes of the Faculty meetings, shall act in place of the Dean in case of absence or illness, and shall give such assistance in the administrative work of the Dean's Office as may be required.

Section III. The Physician Superintendent shall be appointed by the President, on recommendation of the Clinical Committee. He shall act as Superintendent of Lane and Stanford Hospitals under the direction of the Clinical Committee.

ARTICLE III.

STANDING COMMITTEES.

Section I. The following Standing Committees shall be elected at the annual spring meeting of the Medical Faculty as hereinafter provided. They shall continue in office until their successors have been elected.

(a) An Executive Committee consisting of five members. This shall be composed of the Dean or Acting Dean, ex-officio, two members of the San Francisco Division and two of the Stanford University Division of the Medical Faculty. It shall act in an advisory capacity to the Medical Faculty, shall represent the Medical Faculty ad interim, and shall perform such other duties as may be assigned to it by the Medical Faculty.

(b) A Committee on Library consisting of three members. It shall represent the Faculty in its relation with the Lane Medical Library.

(c) A Committee on Admission and Advanced Standing consisting of four members, one from each of the four departments of the Medical School at Stanford University. It shall administer the regulations of the Faculty regarding the pre-clinical curriculum, the admission of students to the Medical School, and the transfer of students to San Francisco.

(d) A Committee on Publications and Announcements consisting of three members. It shall supervise the compilation of the Annual Announcement of the Medical School and any other publications issued under the auspices of the Medical School.

(e) A Committee on Supplementary Medical Education consisting of three members. It shall have charge of all special lectures given under the auspices of the Medical Board.

(f) A Committee on Graduation consisting of three members. It shall recommend to the Medical Faculty those students who have fulfilled all requirements for graduation in medicine.

(g) A Committee on Interne Year and Hospitals consisting of three members who shall recommend to the Faculty such hospitals as in their opinion should be accredited as suitable places for our students to spend the required interne year and shall supervise in a general way the work of the students during the required interne year.

Section II. Each year one place in each of the above committees shall become vacant. For this vacancy in each committee the Executive Committee shall make three nominations. These nominations together with the active membership of these committees, listed in order of retirement, shall be mailed to each voter by the Secretary of the Faculty, not later than one week before the annual spring meeting. Each voting member present at this meeting shall indicate his first, second and third choice of the nominees for each vacancy upon a single ballot provided at the meeting by the Secretary of the Faculty. These ballots shall be counted by a board of three tellers appointed by the Dean or Acting Dean, in accordance with the rules of the Academic Council for preferential voting; except that all tie votes shall be decided by lot. The ballots shall be recanvassed immediately for the selection of an alternate.

(b) The results of the ballot shall be recorded in the official minutes

of the Faculty and whenever a vacancy of one quarter's duration or more occurs upon any of these committees through absence on leave, resignation or other cause, the alternate shall act *ad interim*.

(c) Within one month after the adoption of these Articles the Faculty shall elect the above committees by mail ballot sent by the Secretary of the Faculty to all voting members, under the rules provided in the By-Laws of the Academic Council for the election of Committees of the same, except that after the first ballot, eight choices shall be voted for in case of the Committee on Admission and Advanced Standing and the Executive Committee, and six choices for all other Committees; and that the term of service be determined by order of election, the person first elected receiving the longest term, all tie votes being decided by lot.

This paragraph is only necessary for the inauguration of the method of election previously outlined.

Section III. The Clinical Committee shall be composed of five members appointed by the President of the University from members of the Medical Faculty. It shall recommend to the President for appointment a Physician Superintendent, who shall be a member of the Committee ex-officio. Subject to the approval of the President of the University and the Board of Trustees, this Committee shall have general charge of the clinical material of the Medical School and in connection therewith the management of the hospitals and clinical buildings of the Medical School. This committee shall carry out the policies of the Medical School as recommended by the Faculty and approved by the President and Board of Trustees. Its Minutes must be presented regularly to the Medical Faculty for approval.

ARTICLE IV.

THE DEPARTMENTAL FACULTIES.

Section I. For purposes of administration the Medical School shall be divided into the following departments:

1. Anatomy
2. Physiology
3. Chemistry
4. Bacteriology and Experimental Pathology
5. Pharmacology
6. Pathology
7. Medicine including Pediatrics, Neurology, Psychiatry, Cutaneous Medicine, Tropical Medicine, Legal Medicine, Radiology and Physical Therapy
8. Surgery including Ophthalmology, Oto-Laryngology, Genito-Urinary Surgery and Orthopaedic Surgery
9. Obstetrics and Gynecology
10. Hygiene and Public Health

Section II. The organization and administration of Departmental Faculties in the Medical School shall be the same as the organization and administration of other Departmental Faculties in the University with the following exceptions:

(a) In San Francisco the right to vote in Departmental Faculty meetings may be exercised by Instructors, Clinical Instructors and all those who hold rank superior to these.

(b) In San Francisco requisitions for supplies and equipment when once set up in the budget to the credit of members of the staff or individual laboratories or clinics shall be countersigned by the Dean.

SUPERINTENDENT OF NURSES

Miss Elizabeth Hogue, who has given years of long and faithful service to the University as Superintendent of Nurses, has resigned and Miss Maude Landis has been appointed in her place, her work to begin August 1, 1921.

SOCIAL SERVICE DEPARTMENT

A new regime has been inaugurated in the Social Service Department, which is under the auspices of the Stanford Clinics Auxiliary. Miss Marguerite Wales, a graduate of Vassar College and of the Presbyterian Hospital School for Nurses, has been appointed Director of Social Service. Under her guidance it is anticipated that a strong Social Service Department will be developed in connection with the Medical School, the Stanford Hospitals, and the Stanford School of Nursing. Miss Wales is being assisted by a number of volunteer workers. Their efforts, together with those of the members of the Auxiliary Board, of which Mrs. Timothy Hopkins is chairman, are increasing the public interest in the clinical service rendered by the University. During the past academic year through the sale of special Christmas cards and by other measures a sum exceeding \$5000 has been raised for the support of this important work.

CHARLES N. FELTON, JR. LEGACY AND SPECIAL HOSPITAL ENDOWMENT FUNDS

By the will of the late Charles N. Felton, Jr., the University is to receive the sum of \$100,000 to be known as the Kate Ashley Loomis Fund, this sum to be used in Lane Hospital for the treatment of patients who are unable to pay for same.

This gift, together with the Moses Hopkins free bed account of \$10,000; that of C. G. Lathrop for \$10,000, and the David Hewes free bed endowment of \$6,000, forms the nucleus for a large fund which is needed to meet the expenses of the care of charity patients in our University hospitals. We need a minimum of

\$1,000,000, and should have about \$5,000,000. Through its hospital wards Stanford University renders a most valuable charity service to San Francisco and the surrounding community. There is no reason why, as time goes by, the expense of that service should not be borne by the community rather than by the University.

In order to definitely set up these funds as an entity the following resolution was adopted on August 1, 1921, by your Honorable Board:

That the resolution of August 1, 1916, providing that special endowments be guaranteed and take the same rate of income as that realized on general endowments, be modified in so far as endowments for the Lane Medical Library and the Stanford Hospitals are concerned, and that all present and future endowments and gifts for the use and benefit of the Stanford University Hospitals be separately invested and maintained, except when a contrary intention is indicated by the donor; and that all such gifts be segregated from general endowments and carried on the University books under the heading "Special Hospital Endowment Fund."

FINANCIAL NEEDS

The increasing financial needs of the University to meet its pressing problems, including an adequate salary scale for the professors, the installation of a pension system, and the provision of adequate housing facilities for the students and faculty, made necessary the increase of the tuition fee to \$75 per quarter. The following statement in explanation was issued by the President in the Stanford Illustrated Review for January, 1921:

Stanford University has had to meet a new crisis in its affairs due to the many growing needs of the University, the high cost of living, the underpaid staff, and the housing shortage for both students and professors. Since they cannot appeal for a special tax and there are certain limitations to the Trust, the Stanford Trustees have decided that, unless an increase in general endowments of four million dollars is made in the form of gifts, beginning with October, 1921, tuition fees for new students entering the University for the first time will be \$75 per quarter. A method of deferred payment for students working their way will be established so that payment for tuition in approved cases may be made by seven-year notes bearing no interest until maturity. No change in tuition fees will be made for such students now registered in the University.

The University authorities have made an earnest effort to secure further endowment, but the Stanford alumni body is too young to make the large contribution necessary and the time is not propitious for a public endowment campaign. It is anticipated that some of the alumni will be able to provide scholarships covering at least tuition fees and it is hoped that a

number of geographical scholarships will be founded by friends of the University so that all of the counties in California and most of the States can be represented by students at Stanford.

A budget covering the necessities of the University for the next ten years has been prepared. This provides for certain essential increases in general expenses, for additions to the salary roll, for the maintenance of a pension system, and for certain increases in the housing facilities on the campus. Upon this latter subject the following letter was addressed to the Trustees by President Wilbur on November 4, 1920:

"The University at the present time is suffering from the emergency which has arisen in connection with the housing situation upon the campus. The subject has already been reported to your Board and has been referred by them to the Campus Committee for study. The emergency is one result of the national housing shortage. For instance, the demands from San Francisco upon Palo Alto and the neighborhood have forced up rents and absorbed accommodations we have hitherto relied upon.

STUDENT HOUSING.

"With the opening of this school year we have had to put a large number of our men students three or four in a room in our dormitories. We have also had to appeal to the citizens of Palo Alto to open their homes to students. These conditions are the result of the underhousing in all parts of the community. The student body is being demoralized to a considerable extent by these unsatisfactory living conditions. During the war many of our young men became accustomed to barracks life, and with the present living conditions I fear a development of the barracks attitude on the part of our men. The work of the students naturally suffers in consequence of this overcrowding. We wish to do more at Stanford University than merely to offer classroom instruction. We want to develop a high type of western manhood and have external conditions such that they make for high ideals and proper normal living. I feel that it is an urgent necessity for us to correct the existing conditions. In order to accommodate a student body of approximately 2,000 we need to erect promptly additional residence halls, and eating facilities for 200 women and 500 men. If this is done we can, together with the use of most of the existing sorority and fraternity houses, meet our problem for a number of years to come. There will be a time when, as the fraternity houses become worn out, they will have to be replaced by adequate and permanent buildings. I think we have a plan for building that will meet the wishes of the whole community, that embodies the best features of the dormitory, fraternity, and the noted Oxford College system.

FACULTY HOUSING.

"It is a prime necessity to have the members of the Stanford faculty properly housed on the campus. Besides we have an additional reason in the inability to secure houses in Palo Alto. Within a comparatively few years a considerable number of the old houses along Alvarado and the other rows will have deteriorated beyond the possibility of proper repair. Like-

wise within the next few years it will be necessary to replace some ten of the leading men of the University who will retire on pensions. I feel that it is desirable to make more satisfactory living arrangements for our faculty. We cannot expect men on a salary of from three to seven thousand dollars to pay a large rental. I think that we can anticipate only a payment of from \$40 to \$75 per month. We need about fifteen to twenty new houses, value from \$6,000 to \$15,000, built on the hills above the University buildings, perhaps with some permanent furniture provided, which can be capitalized in such a way that they will be rented at from \$50 to \$75 per month, the balance of the cost to be written off against the income. If we can have proper homes on the campus rented at a reasonable figure, we can make our whole faculty more comfortable, and we will also be able to obtain the best available men for the positions that will become vacant and maintain an institution of high quality."

Upon the recommendation of the Campus Committee, of which Mr. Herbert Hoover is Chairman, the Trustees decided to proceed with the following building scheme as rapidly as funds are available:

1. Dining and other facilities for Encina Hall.
2. Residence and dining halls for 480 men.
3. Residence and dining halls for 200 women.
4. A \$250,000 loan plan for professors' houses.

The men's residence halls will be built in units of 120, with sub-units of 30, with a general college hall, separate libraries, and small dining rooms. These will be arranged in the form of quadrangles and be located between Encina Hall and Alvarado Row. The preliminary plans of these buildings have been presented to the Housing Committee of the Alumni Interfraternity Conference, and if they work out well in practice they probably will become the model for the eventual housing plan for the fraternities when their present buildings deteriorate.

The changes in Encina will include not only dining accommodations but the installation of smaller library or assembly rooms on the different floors.

The new residence halls for women probably will follow the general plan of units—associated together—but the details have yet to be worked out and will depend largely upon the results obtained with the new residence halls for men. Reports of various sorority housing committees are being carefully studied, and the final plans will be talked over with them.

Upon the recommendation of the Campus Committee the following resolution has been adopted by the Trustees in regard to additional housing facilities needed by the faculty:

"RESOLVED, That the Board of Trustees hereby create a fund to be known as the Faculty Housing Fund: (1) Said Faculty Housing Fund shall be managed by (a) the University Comptroller, (b) two Trustees, (c) two representatives of the faculty. The representatives from the Trustees and from the faculty to be appointed by the President of the Board of Trustees after consultation with the President of the University. (2) The Board of Trustees to appropriate the amount of \$250,000 to be

paid when and as required by said committee and charged to Building Fund. (3) This Faculty Housing Fund to loan to members of the faculty 90 per cent of the cost of new homes upon the Campus without interest, the principal to be repaid in monthly instalments over a period of twenty years. (4) It being the object of the Trustees to secure the construction of permanent buildings of substantial and attractive character, the minimum cost and plans of such houses shall be approved by the Board, the intent being to encourage construction of the best type. (5) An additional restriction to be placed upon such houses is that they may be sold only to members of the University or rented to other than members of the Faculty for not more than one year, and that no guarantee be given as to their repurchase. (6) That said persons so designated to manage said funds shall be known as Directors of Faculty Housing Fund and shall keep records of their proceedings and shall submit them annually to the Board of Trustees. (7) The present plan of twenty-year ground leases with option of four sequent renewals to be maintained."

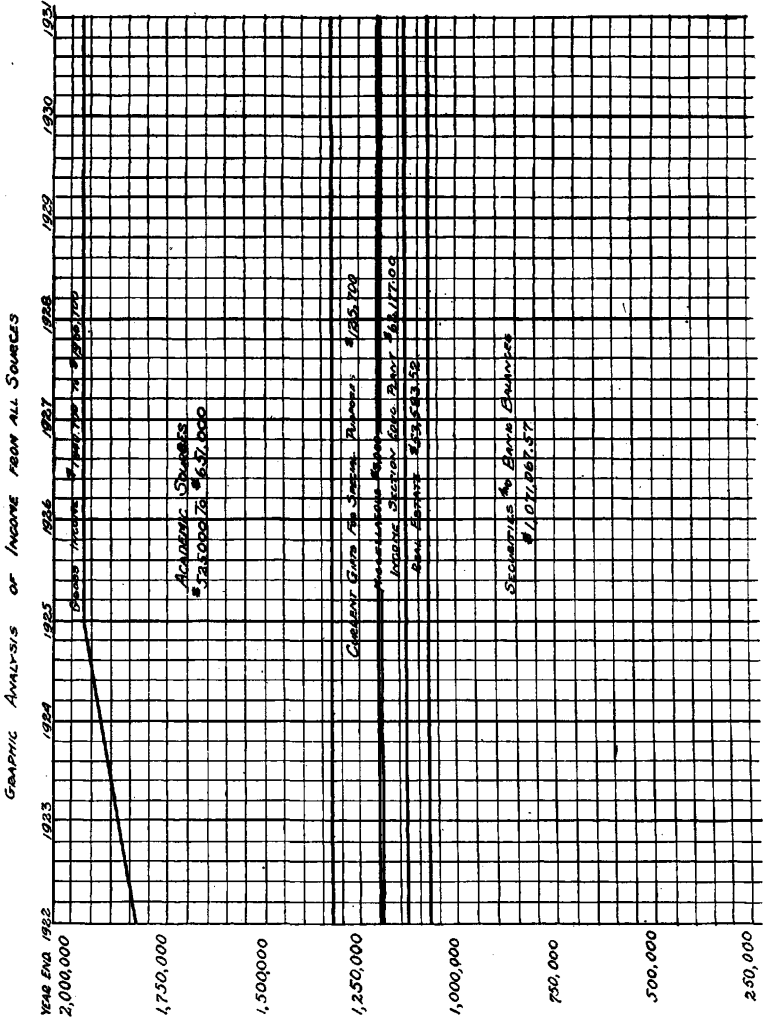
These actions of the Board of Trustees ensure that Stanford University will continue to grow in educational facilities of all sorts, but will not permit of an increase in the size of the present student body. A careful study is being made as to the best way in which to apply the necessary regulations for limiting the number of students accepted.

It is anticipated that the present arrangements for the Lower Division will continue unless there is a complete change in the educational system of the State of California, and even then Stanford may find it desirable to offer a full four years of undergraduate work to a limited number of students for an indefinite period.

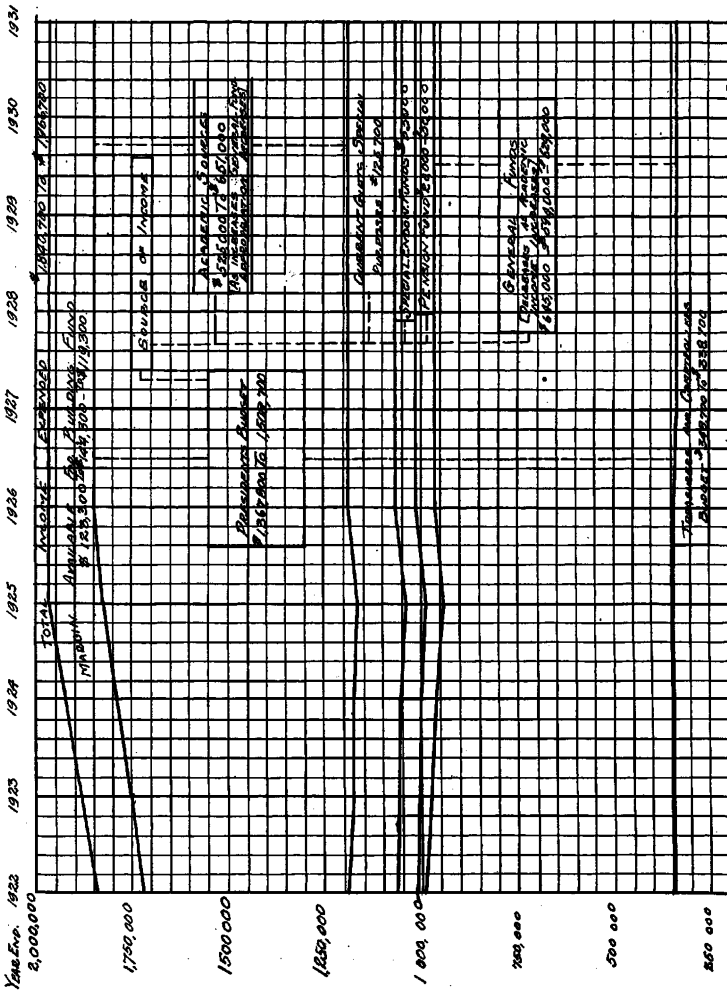
Notwithstanding the numbers of students, both men and women, applying for admission, the plan of Stanford will be to remain small in size and to devote the fullest attention to those admitted, so that it will continue to turn out thoroughly trained students with sound and democratic ideas of citizenship.

The increase in income which will be obtained by the new fee will amount to approximately \$42,000 for 1921-22; \$84,000 for 1922-23; \$126,000 for 1923-24; \$168,000 for 1924-25. The amount needed for pensions during the next ten years increases from \$24,000 to \$80,000 per year. The President's budget must be increased to meet the ordinary demands for salary increases and the new needs that are constantly present in a university, which must grow or stagnate. This has been set at \$25,000 a year for six years. Beyond the sixth year any expansion of the President's budget will have to be from some new source of income not now in evidence.

Since the Trustees took hold of the University, \$100,000 has been set aside annually from income for depreciation and new buildings. This means that with the increases indicated from



GRAPHIC ANALYSIS OF EXPENDITURES



the new fees there will be a period of a few years when, not being required under this ten-year plan for pensions or other demands of the President's budget, they can be added to the Building Fund to hasten the construction of those buildings absolutely needed for housing our students. The graphic plan, which is herewith attached, while not accurate as to figures, gives in general the source of income and the distribution of income of the University over a ten-year period. We are still at work with the architects hoping to obtain an ideal housing plan. With the completion of the Stanford Union, which is now under way, we shall have begun to get some of those eating and housing facilities which are absolutely needed.

PENSION PLAN

After several years of careful consideration and the analysis of various pension systems, upon the recommendation of the Committee on Pensions of the Faculty, the Board of Trustees finally decided to enter upon the scheme made possible by the Teachers Insurance and Annuity Association of America, in co-operation with the Carnegie Foundation. At present, as far as pensions are concerned, the members of the faculty are in three groups:

CLASS A, made up of a few men retiring before June 30, 1923, who will receive the full pension, under the old rules of the Carnegie Foundation, which were abrogated in 1915.

CLASS B, making up the larger part of our faculty, men who were under the old rules and who under the new rules must have provided for them by the University retiring allowances between the ages of 65 and 70, unless through increase in its resources the Carnegie Foundation will take this responsibility at an earlier period. Under their revised rules the full pension available under the old rules at 65 does not become available until 70. Consequently the University has to make up the difference.

CLASS C. These are members of the faculty and university staff appointed since 1915. For these men the plan adopted is to purchase an annuity policy payable at 65, paying therefor a sum equal to one-tenth of their annual salary. Practically under our present arrangement this amounts to an addition of 10% to the salary of all members of the Class C group.

The University is also to all intents and purposes making additions to the salaries of the members of the Class B group, which will become available for them when they retire.

The legislation of the Board of Trustees upon this subject is as follows (November 5, 1920):

Resolved, That the Treasurer and the President of the University be authorized to enter into negotiations with the Teachers Insurance and Annuity Association with the view of placing the Faculty Pension Fund with them on an individual policy basis, the University paying the premiums therefor instead of setting aside \$75,000 annually for the creation of said Pension Fund.

ENDOWMENT COMMITTEE

One of the most notable gifts to the University during the year was the offer of the General Education Board of the sum of \$300,000 towards \$1,000,000 to provide adequate professors' salaries, with the understanding that if the offer was accepted by the University, the Board would advance \$25,000 a year for two years, so that these increases could be made at once. This offer applied only to members of the faculty of the College of Arts and Sciences.

An Endowment Committee was appointed made up as follows: Mr. Newhall, Mr. Hopkins, Mr. Gregory, Mr. Nourse, Mr. Roth, and President Wilbur, for the study of this offer and of the methods of securing that additional endowment that is absolutely requisite for the future development of the institution. Not only is it necessary to meet this offer of the General Education Board to raise \$700,000, but in addition, as indicated before, the hospital should have a special fund of from \$1,000,000 to \$5,000,000 for the handling of charitable cases and for medical research, and the University needs a sum of \$1,000,000 or more for the erection of buildings for which there is a pressing need.

THE PROBLEMS OF THE ENDOWED UNIVERSITY

Stanford University is taking its place as one of the greatest national foundations for public service. As one of a number of privately endowed universities it has certain problems to meet that are common to them all. May I here review some of them in the hope that it will be helpful in working out our future plans.

The university is a testing and germinating center for new thought and new facts and an instrument for carrying over from one generation to the next the accumulated information of the world.

The endowed university is usually a materialization of the vision of some man who, far ahead of the average of his time, set aside accumulated resources for the upbuilding and stimula-

tion of civilization. The benefits obtained from such foundations depend more upon their freedom and elasticity than upon the actual amount of the original endowment funds. Their growth is determined by the results actually obtained in education and public service; by the friends made and the coöperative sense of support that is developed among their constituents.

It is impossible for any man at any given time to give even a reasonable forecast of the future. Ordinarily the trusts endowing universities have been broad in character. Even where a founder has had the temerity to place hampering restrictions upon his gift to the future, methods of growth have ordinarily been found. In some instances, such as that of the Girard College, lack of vision of the founder has kept a great trust from expanding its service in the best way. But there is a constant tendency to overcome limitations with experience and the passage of time. New needs find ways of being met.

Some limitations have been helpful in providing the means of growth, since there is always a large element in the community whose interest is primarily associated with their own mode of thought or religious views. Happily the capacity that brings together the fortune that makes large gifts to the public possible is often associated with penetrating and broad vision and a recognition of the essential principles of life.

One of the most interesting phenomena in American education has been the effect of such great foundations as those of Carnegie for the pensioning of professors and of the gifts made by the various Rockefeller foundations in broadening out the religious restrictions of colleges and universities. In the long run the endowed university can keep touch with its advancing surroundings and can lead in many ways.

The main problem of the endowed institution is to conduct its affairs so that provision for its growth shall come from its friends and because of its public service. For every privately endowed institution must grow or it becomes more or less defunct and ineffective.

The requirement of steady growth for a university is as essential as is growth for a child. The university as one of the longest lived of all human institutions must grow continually and never reach a stage of maturity and then decline, as we see in the or-

dinary human life. It must constantly grow and undergo evolution so that it is in constant service to the present and in constant preparation for the needs of the future. It must also stand for beauty in all its forms.

The basis of the life of privately endowed institutions is income, either from endowment funds, students' fees, or gifts. Money is necessarily the life blood of the university. Since the public cannot be called upon for its compulsory support through taxation, it must be stimulated to voluntary support in various ways.

The continuing and expanding life of a university depends primarily upon its alumni and upon the public. The most encouraging factor in looking ahead to the future of the endowed university is the record of gifts and of alumni support given to such endowed institutions as Harvard, Yale, Princeton, University of Chicago, Johns Hopkins, Smith, Bryn Mawr, etc., in the past and the great flood of added endowments resulting from the various endowment campaigns of the last few years. These additions to the financial strength of these institutions have come about in the form of small individual gifts for the most part directly applied to the expenses of the university, by larger gifts gathered together by groups of the alumni, such as the class funds, and by large special or general endowments collected either by mass action or by the gift of an interested individual of vision.

It is primarily essential that the endowed university must conduct its affairs in such a way as to breed confidence. Nevertheless one of the most serious defects of university finance has had a rather unusual result. The ordinary business which is conducted upon a deficit basis has no friends, but many universities over a long period of years have been able to accumulate annual deficits and these have been met by gifts from the alumni. It has been a very bad policy in one way and a good financial policy in another, because it has brought support year after year. When the endowed universities are able to live within their budgets and obtain gifts equal to those now obtained to meet deficits for new projects and growth, a much sounder form of university finance will be established and the advance of the universities will be more uniform and satisfactory.

STUDENT FEES

From the inception of most privately endowed institutions the financial burden has been distributed to a greater or less extent upon the students obtaining the benefits. In fact, some institutions have in the past largely depended upon the income derived from student fees. As has been recently said, "What earthly excuse is there for charging a rich man's son one-half of what he ought to pay and then paying a professor half of what he ought to get?" There is naturally a limit to the amount that any individual student should have to pay in obtaining a higher education. The main advantage of an endowment is to reduce the burden upon the student and to provide an excess of time for the teaching staff to be devoted to scholarly work and research. Stated in another way, the overstaffing of a university is the basis for the growth of knowledge. In a democracy such as ours it is fundamental that every one should have the right to rise from one level of endeavor to the next and that there should be no insurmountable barriers placed in the road of brains, courage and physical and mental ability. In most institutions where tuition has been in existence there has developed a system of fellowships, scholarships, and loan funds in order to make provision for students who were financially incapable of meeting the ordinary fees. There are many advantages in such scholarships and loan funds, provided they do not make education seem entirely free to the student. If they are used as prizes for high scholastic endeavor they are not apt to act in this way. Human beings are so constituted that for the most part they only respect the things for which they must pay either in money or energy. In the handling of the problems of endowed universities it is very important to remember that those who learn early to contribute to their support and to pay in part for what they get are most apt to be willing and ready to meet their needs and advance their purposes in the years after they have left the institutions. The great alumni support that has manifested itself in hundreds of ways in this country is a striking example of the above.

NEW EDUCATIONAL VENTURES

One of the great advantages of the privately endowed institution is its capacity for entering upon new ventures. The state university, relying upon the tax payer represented by the legis-

lature, is handicapped in advancing fundamental science, pure scholarship and many forms of research. The privately endowed institution can take the leadership in this regard and after the path has been blazed it is comparatively easy to secure the affirmative action of legislatures appropriating funds to permit the state university to do what the private institution has done. In fact, the greatest contribution of the privately endowed university to American education has come from its capacity for initiative and its ability to express in actual deeds, in departments and appointment of professors, the dominant leadership of some great man or of a group of men.

ACADEMIC FREEDOM AND ACADEMIC TENURE

It is important to point out the service that has been rendered to education through the relationship of the privately endowed institution to academic freedom and academic tenure. The development of these would have been very difficult for state universities, subject as they often are for many of their appropriations to the political prejudices of any particular period. Waves of hysteria and prejudice pass through our people and naturally have a marked influence upon the legislatures. It is a very necessary thing for places to be provided for men whose primary obligation is to fact and truth, and to see that they are protected and given the power of free expression. Only by following the truth as well as we can see the truth can we hope to make any substantial progress.

The attitude taken by the public in general towards academic freedom indicates a general recognition of this condition. It is true that there may be abuses of this great privilege by individuals but in the long run the advantages far outweigh the disadvantages. No university should accept gifts contingent upon the maintenance of rigid lines of thought on social, political or religious questions. The power to grow and to change with each generation is the hope of the university. At the best forward steps must inevitably be made through a dense and tangled maze of tradition, conservatism and pure inertia. The obligations accepted with a gift become sacred so that donors should be urged to state their wishes or stipulations in as broad terms as possible, thus permitting the gift to be useful under all possible conditions that may arise with the lapse of time.

The granting of practically life tenure with pensions upon retirement for the full professors of endowed universities has made it possible for a group of men of superior training to devote themselves to the advancement of knowledge and to the education of youth. We freely admit that academic tenure leads to certain abuses and to the maintenance of a certain percentage of mediocrity in all faculties. But without the security of tenure an entirely different type of institution would be developed and an entirely different type of man would be attracted to the university teaching profession. It is much easier for the state universities in one way or another to maintain academic tenure when those on private foundations have taken the leadership in this direction.

RELATION TO PUBLIC SCHOOLS

The relationship of the privately endowed university to the educational system of the country is of marked significance. Some have been unwilling to coördinate their admission requirements with the public educational program. The result has been that a considerable portion of their students have been trained in private schools serving more or less as preparatory schools for them. This is most unfortunate since it makes them somewhat provincial and exclusive and is apt to bring them a moneyed class as distinct from the ordinary public school student. Fortunately pressure of one kind or another and improvement of the high schools in all parts of the country is reducing this abuse. Fortunately, too, pedantry is becoming less and less noticeable in entrance requirements. There is a general tendency to broaden these requirements and to permit a larger range in the subjects presented. Educational institutions are apt to move somewhat slowly and well entrenched private endowments often need rather heavy jars to be set into motion. We are now seeing one of the results of the recent war in its influence upon the changes in college entrance requirements and in the organization of curricula and the requirements for graduation.

RELATIONS TO OUTSIDE INDUSTRY

If the university is to maintain its leadership it is important that it shall be fully in touch with everything in the way of progress that is going on outside either in sociology, finance, literature, or science. It must keep its fundamental work in contact

with the advances being made in the various professions. Particularly along scientific lines it needs association with great industrial enterprises based, as they must inevitably be, upon the facts of science. One of the ways to keep a faculty group from becoming provincial and fossilizing is to bring in from the outside men who are engaged in the work of the world and to have the men on the various faculties take part to some extent in the life outside.

The maintenance of the future happiness of the human race, the elevation of the standards of living, the rise of the economic level, the spread of the ordinary common sense needed to prevent the destruction of civilization by war, will come more from the university class room and laboratory than from any other source. The leadership of trained brains, the knowledge of the expert, the voice of history, are sorely needed and they can come most effectively from within the walls of our colleges and universities. One bit of new knowledge may change our relationships to power, to agriculture, or any one of the great fundamentals of our common life.

During the war members of college faculties were found to possess unusual qualifications for the new and unexpected positions that arose on every hand. There is every reason why the superior type of mind that enters a university faculty should be capable of handling practical problems on the outside.

While the term "academic" has come to refer to things that are of no immediate practical interest, as a matter of fact large parts of the present university curricula have as their major context the solution of practical affairs. Probably the most important way in which the university can obtain that assistance from the outside world that is necessary for advance is by having members of the faculty take part from time to time in enterprises where unusual knowledge or unusual skill is required. Ordinary hack work should not be considered. The university should be willing to allow the capable members of its staff to spend a portion of their time in outside work receiving compensation therefor. The university ordinarily pays for nine months of service and anticipates that the rest of the time will be taken in scholarly development and in physical rehabilitation. No eight-hour day is possible in academic life for the man who wishes to lead in his particular field. There is a marked strain about educational

work. Long hours are needed for study and relaxation must be had by mental workers if they are not to wear out. Often employment on the outside of a practical character along the lines which have been the basis of instruction are refreshing to faculty men.

UNIVERSITY NOT STANDARDIZABLE

One of the difficulties in a large university is the almost inevitable overlapping and duplication of courses with the necessary expense involved. If this does not go so far that it becomes too expensive, it is not necessarily objectionable, because the different points of view in giving instruction in the same field are often of much advantage to the student and to science. There is no possibility of standardizing the work of a university in the way desirable in a factory manufacturing pins or rat traps. The main investment of the university is in brains of high quality and of wide diversity. Individuals capable of university leadership usually have unique and individualistic qualities. One man is capable of doing stimulating teaching, while another man of highly developed curiosity and mechanical skill is capable only of sustained interest when he attacks research problems. In the university all degrees of these various types are represented in the faculty, and, aside from seeing that each one contributes his fair share to the general work of the university, no standardization is desired or feasible.

HOUSING PROBLEM

The privately endowed American university at its best has deviated from the university of Continental Europe. In America we have imitated more the Oxford and Cambridge system of providing some form of housing for our faculties and students in immediate connection with the university campus. The Continental European students are usually turned loose to find their quarters in a large city with the result that a large percentage of them ordinarily perish as far as the university is concerned, picking up habits and customs that interfere with them during their student period and often prevent service to the general welfare in their later life.

In America we have found that when students are housed together there is developed a strong coöperative sense of loyalty and enthusiasm called "college spirit" which has a profound effect

upon the development of the character of the students and upon the welfare of the institution. In America the rapid growth of the student body has usually made it impossible to house and provide adequate dining service for all the students. Wherever this has been undertaken by private boarding houses or in other ways outside of university influence, the results have not been as satisfactory as under the system that is traditional in endowed institutions of this country.

It is desirable for every endowed university to seek funds or use a part of its income in building dormitories where clean, warm, quiet quarters suitable for the life of a student may be obtained at a low rental. A small income beyond that required for maintenance and upkeep should be derived from such buildings, but a proportion, equal at least to half of the original cost, should be in the form of endowment.

It is most important also for the university authorities to see that adequate and reasonably priced housing is available for members of the faculty. To merely increase professors' salaries so that they can pay higher rentals is obviously unfortunate. It is a proper charge on the resources of any university to divert such funds or income as is necessary to make for good faculty homes. It is wise to have such a grouping of the faculty that they and their children are not brought in social competition with those of a less wholesome but more florid type of living. It is well to have communities where brains and not money set the pace and win the prizes.

STUDENT PROBLEMS

In America the acquisition of knowledge is at a slower rate than is customary for the European student. Consequently our scholarship standard, both for faculty and student, has often not been of the best. Until recent years the work of preparatory schools has usually been of rather a shabby and careless character. Students have come to the university without a knowledge of how to work, with little understanding of the orderly handling of topics, and their absorption has been difficult. We owe much to the Massachusetts Institute of Technology and to the high grade technical schools within and outside of the universities in the evolving of higher standards of scholarship. The over-development of the social organizations and of the extra-

curricular life of the student has reached a degree in many institutions that has interfered remarkably with scholarship. In the long run, universities are organized for scholarly purposes and it is inevitable that scholarship must become ascendant.

Student government and the management of the student from the social standpoint have been interesting problems for the endowed university. Adolescents in their teens and young men and women in their early twenties are full of initiative and courage and have not as yet developed judgment. For generations university faculties have tried to adopt the methods of management in vogue in the juvenile school room. The results have been almost uniformly unsatisfactory. Of late years there have been installed various forms of student government placing the burden of the responsibility upon the students, with marked advantages both to the students and to the university. Judgment is often acquired when responsibility is in evidence and the effect upon the development of good citizenship has been marked. Unless we make good citizens all of our efforts at mental stimulation are worse than wasted. Sharpened wits can prey the better on the rest.

LIMITATION OF EFFORT

It is important for the management of an endowed institution to make a careful study of all the sources of income available from the trust, from the students, and from the friends of the institution and then to limit the endeavor of the university to the things which can be well done with the available financial resources. The field of education is so broad, the need of knowledge is so pressing that there is a constant temptation to reach out, to multiply courses, to add professors, to rely upon the future to bring in sufficient income to meet the ever growing demands based upon the ordinary growth of human knowledge. This limitation can either take the form of restricting the number of students, which can be admitted, or it can be a limitation in the courses and number of departments, schools, etc., in which work is given. In general a combination of the two is apt to be most satisfactory. Over-crowded class rooms inevitably result in poor teaching for the individual. When fifty can be accommodated satisfactorily in a class and ten to twenty more are added, all the members of the class suffer. The essence of the university is quality.

It is true that the state must, through its university or through some other source, provide an opportunity for higher education for those who have the capacity, the aspiration and the industry. The privately endowed institution can legitimately limit its fields. The limitation of the field of the state university should come only through the voters and tax payers as represented by the legislature and should not come directly from the management of the university itself, except in so far as students disqualified because of lack of ability or application are concerned.

PROFESSIONAL SCHOOLS

The American university has evolved from the American college. For the most part we see the college and the university side by side. With the development of the junior college system, within another generation there will be an inevitable change in the context of the courses offered by the so-called college. There will be hundreds of tax-supported institutions throughout the country giving work that corresponds to the freshman and sophomore years in college. When this process is well under way, then the endowed American university, beginning with the work that we now call the junior year, will carry its students on for two to seven or eight years into the various fields of thought, the various professions, and the various types of research.

Nearly all privately endowed American universities now have one or more professional schools firmly incorporated in the general university. The professions of law and medicine have largely been rescued from the low standards of the commercial colleges by the universities. Much has been added to university life, to the stimulation of research, and to assistance from outside resources by the schools of law, medicine and engineering. Theology has not been generally accepted by the American university, but that religion and instruction for religious teaching will grow in importance is desirable and is apt to occur as new ideas force out ancient dogma and the essential religious truths remain.

Every university should add full fledged professional schools as soon as it is financially possible to do good work. The expense of modern training along professional lines is so great that it can not be fully borne by the student, but must become in large part a burden on the tax payer or on endowment funds.

The maintenance of a proper balance between subjects within

the university and the placing of emphasis upon a department by added financial help is the greatest task of a university executive. The old must not be lost sight of, although new and pressing needs must be met. It is impossible to determine what knowledge is the best, but certainly without research there is no university. We can set no percentage figure of time or money for the purposes of research, but only that institution which has a large proportion of its energy going into new fields will be able to meet the inevitable demands of an advancing civilization.

In conclusion we can state that the whole problem of the endowed university is to live and grow in useful and constant harmony with the immediate and future individual and group needs of all humans.

FACULTY

Absences.—Sabbatical leaves for the academic year 1921–22 have been granted to the following: Assistant Professor Edgar Davidson Congdon, of the Department of Anatomy; Professor Douglas Houghton Campbell, of the Department of Botany; Professor William Herbert Carruth, and Assistant Professor Arthur Garfield Kennedy, of the Department of English; Professor Rufus Lot Green, of the Department of Mathematics; Professor William Frederick Durand, of the Department of Mechanical Engineering; and to Professor Charles Henry Gilbert, of the Department of Zoology, for the autumn quarter.

During the academic year 1920–21 the following members of the faculty were on leave: Miss Margery Bailey, Instructor in English, was studying at Yale; Miss Elisabeth Lee Buckingham, Instructor in English, spent the year at Columbia University; Assistant Professor Yamato Ichihashi, of the Department of History, spent the year in European travel.

Leaves of absence have been granted to the following members of the faculty for the academic year 1921–22: Miss Margery Bailey, Instructor in English, for further study at Yale; Mr. Miller L. McClintock, Instructor in English, for study at Harvard; Professor John S. P. Tatlock, of the Department of English, for study and travel in Europe during the autumn quarter; Associate Professor Frank A. Golder, of the Department of History, to continue the collection of material for the Hoover War Library; Assistant Yamato Ichihashi, and Associate Professor

Edgar Eugene Robinson, of the Department of History, to attend the Disarmament Conference in Washington, D. C.; Professor Payson Jackson Treat, of the Department of History, for the autumn and winter quarters, to deliver a course of lectures in the Orient; Professor Edwin Angell Cottrell, of the Department of Political Science, for the winter and spring quarters, for work at Harvard.

Resignations.—The following resignations have been received and accepted: Miss Harriet Bradford, Dean of Women; Miss Gwendolen Harriet Garsed, Assistant Registrar; Mr. Heinrich Wilhelm Brinkmann, Instructor in Applied Mathematics; Miss Elizabeth Hogue, Superintendent of Nurses and Professor of Nursing; Major Stuart A. Howard, Professor of Military Science and Tactics; Lieutenant Wilson G. Bingham and Captain Howard Eager, Assistant Professors of Military Science and Tactics; Miss Yolanda Shaw Allen, Instructor in Physical Education for Women.

Promotions.—The following promotions take effect with the beginning of the academic year 1921-22: Associate Professors Leroy Abrams, in Botany; Thomas Addis, in Medicine; William Albert Manning, in Applied Mathematics; Clifford Gilmore Allen and Aurelio Macedonio Espinosa, in Romanic Languages, to full professorships; Assistant Professors William Ludlow Holman and Edwin William Schultz, in Bacteriology; William Martin Proctor, in Education; Everett Wallace Smith, in English; Charles Norman Cross, in Mechanical Engineering; and Frank Walter Weymouth, in Physiology, to the rank of associate professor; Instructors Elisabeth Lee Buckingham and Edith Ronald Mirrielees, in English; Gordon Floyd Ferris, in Entomology; James Percy Baumberger, in Physiology; and Edward Bancroft Towne, in Surgery, to the rank of assistant professor; Assistant Clinical Professor Henry George Mehrrens, to the rank of Assistant Professor of Medicine.

New Appointments.—The following appointments take effect with the beginning of the academic year 1921-22: Directors of the Food Research Institute, Dr. Carl Lucas Alsberg, Dr. Joseph Stancliffe Davis, Dr. Alonzo Englebert Taylor; Wilfred Eldred, Special Investigator, Food Research Institute; Professors Paul John Hanzlik, in Pharmacology; Maude Landis, in Nursing and Superintendent of Nurses; Associate Professors Robert Bennett Bean, spring quarter, and Edward Allen Boyden, winter and spring

quarters, in Anatomy; Eliot Grinnell Mears, winter and spring quarters, in Economics; Mary Yost, in English and Dean of Women; Solon Shedd, autumn quarter, in Geology; Frank A. Golder, Edwin Maslin Hulme, and Henry Barrett Learned, for the winter and spring quarters, in History; Welton J. Crook and F. G. Tickell, in Mining and Metallurgy; Assistant Professors James Gordon Emerson, in English (Public Speaking) and Albert F. O. Germann, in Chemistry; Instructors Leo Gregory Gianini, in Applied Mathematics; Ward B. Kindy, in Electrical Engineering; Charles K. Lowry, Jr., and John Russell, in Chemistry; Alexander Brede and Lawrence Bergmann Wallis, in English; Boynton Morris Green, in Mechanical Engineering; Robert Reid Newell, in Medicine; Floyd De Eds, in Pharmacology; C. E. Van Gent, in Physical Education for Men; Lecturers Francis W. Hirst, in Economics, and Edward Latimer Beach, in Naval History. Mr. Charles Baldwin Goddard has been appointed Assistant Registrar. Dr. L. Emmett Holt of New York City has been appointed to deliver the Lane Medical Lectures, and Professor Irving Babbitt of Harvard University is to deliver the West Memorial Lectures.

Deaths.—The University community has been saddened by the loss of the following members of its staff: Arley Barthlow Show, Professor of European History, October 28, 1920; Andrew William Hoisholt, Clinical Professor of Medicine (Psychiatry), December 17, 1920; Albert Cornelius Crawford, Professor of Pharmacology, March 14, 1921; and George Hempl, Professor of Germanic Philology, August 14, 1921.

Resolutions passed by the Academic Council, January 7, 1921:

Arley Barthlow Show, Professor of European History, died in Palo Alto, October 28, 1920.

Professor Show came to Stanford at the beginning of the University's second year. At the time of his death he was within a few months of the retirement age, and in August next would have completed twenty-nine years of active service. Throughout this long period of development and testing, Professor Show was recognized as one of the staunch men of the University, loyally devoted to its highest interests. As a member of working committees, and in faculty deliberations he was always interested, constructive, and of sound judgment. In his own department he held to high standards and was recognized as a wise counselor and successful teacher. As a colleague he was hearty, appreciative, courteous, a good companion and friend. In community affairs he took his full part and was preëminently the good citizen. In the Stanford environment he found

opportunity for his own development and gave back to the University the best that was in him.

In grateful recognition of the fine qualities exemplified in Professor Show's long life among us and in appreciation of his comradeship and friendship this tribute is hereby adopted and ordered spread on the minutes of the Academic Council.

Resolved, That we, the Faculty of Stanford University, express our deep regret at the untimely death of our colleague and friend, Andrew William Hoisholt.

Be it further resolved, That we record our warmest appreciation of his untiring, unselfish and fruitful labors in behalf of the mentally afflicted, for which a gentle demeanor, a broad knowledge of psychiatry and high aims especially fitted him and enabled him to set an example in the study and treatment of diseased minds, which it will be the part of wisdom to follow.

Be it further resolved, That we proudly testify to his self-sacrificing efforts in enlarging the opportunities for the study of mental diseases in behalf of students and that we commend his unvarying devotion to the University and to the State.

Be it further resolved, That these resolutions be incorporated in the minutes of the Faculty of Stanford University and that the Secretary be instructed to transmit a copy of the same to Mrs. Hoisholt and, in view of Dr. Hoisholt's long and faithful services to the State, also to His Excellency, the Governor of the State of California, and to the Chairman of the State Board of Control.

Resolution passed by the Academic Council, April 1, 1921:

Albert Cornelius Crawford, Professor of Pharmacology, died March 14, 1921.

Since the self-sacrificing labors of our colleague and friend, Albert Cornelius Crawford, have been ended by death, be it

Resolved, That we, the Academic Council of the Faculty of Stanford University, record our deep regret at our loss and our warm appreciation of his unstinted devotion to his students and to the pursuit of investigation.

That we further bear witness to his accomplishments in research, to his perseverance in adversity and to the spirit of complete self-abnegation which controlled him, often to his own disadvantage, even to the hour of his untimely death.

That these resolutions be incorporated in the minutes of the Council and that the Secretary be instructed to transmit a copy of the same to Mrs. Crawford, to Doctor Crawford's Alma Mater and to the Secretary of the American Society of Pharmacologists, of which he was a member.

Resolution passed by the Academic Council, October 7, 1921:

George Hempl, A.M., Ph.D., LL.D., Professor of Germanic Philology in this University since 1906, died on Sunday, August 14, 1921. During years of slowly failing health he had struggled to carry his scholarly work to such a degree of completion as would establish his ideas and permit

further work in the fields of linguistic study which he had opened. He came to Stanford a ripe scholar, established in reputation, master of a most unusual technique in linguistic study, thoroughly tested in the fields of English and Germanic philology. Thereafter his studies led him to conclusions as to baffling inscriptions in ancient Mediterranean tongues from which he inferred relationships among these peoples not heretofore suspected, still less believed. Eager as he always was to extend his studies, he deferred publishing the complete evidence of his conclusions, contenting himself, for the most part, with announcing his results, to the surprised incredulity of his colleagues in linguistic research.

As teacher and executive Dr. Hempl was the stimulating, devoted scholar, no less strict with himself than with others in the pursuit of the ideals which he advocated. In his family and social relations he was affectionate, unselfish, and kind; and this expression, by his colleagues of their high regard for his scholarly attainments, becomes also an expression of their affection for him as a man. In his life, and in his death, which took place in sleep, he gave cause for admiration and envy.

SUMMER QUARTER

The summer quarter at Stanford has constantly and steadily grown in its importance and significance. With the change to the four-quarter system it was determined that the summer quarter should take its place on a par with the other quarters of the University and that there would be no attempt to imitate the ordinary summer school with its lowering of standards and marked increase in extra-curricula entertainments, etc. The sound work offered has been appreciated. In the summer of 1921 a total of 1132 students was present.

The following members of other faculties formed a part of the summer quarter faculty:

Summer Quarter Appointments.—The following were appointed for the summer quarter, 1921. As Acting Professors: Julius Stieglitz, of the University of Chicago, in Chemistry; William Webb Kemp, President of the San Jose State Teachers College, in Education; Charles Grosvenor Osgood and Robert Kilburn Root, of Princeton University, in English; Frederick Green, of the University of Illinois, and William Green Hale, of the University of Oregon, in Law; Herbert Leslie Stewart, of Dalhousie University, in Philosophy; Arthur Norman Holcombe, of Harvard University, in Political Science; John Driscoll Fitz-Gerald, of the University of Illinois, in Spanish. As Acting Associate Professor: Solon Shedd, of the State College of Washington, in Geology. As Acting Assistant Professors: Raymond Holder

Wheeler, of the University of Oregon; J. Harold Williams, of the State Bureau of Juvenile Research at Whittier, and Ben Wood, of Teachers College, Columbia University, in Education; George Edward Osborne, of the University of West Virginia, and Bryant Smith, of the University of Colorado, in Law; René Levesque, of Amherst College, in French. As Lecturers: Francis W. Hirst, of London, in Economics; Edwin Reagan Snyder, State Commissioner of Vocational Education, and Will Christopher Wood, State Superintendent of Public Instruction, in Education; Howard L. Bevis, of Cincinnati, Ohio, in Law; Herbert Rowell Stolz, of the State Department of Physical Education, in Physical Education for Men; Edwin Garrigues Boring, of Clark University, in Psychology. As Acting Instructors: Marvin Lloyd Darsie, of the University of California, Southern Branch, in Education; Genevieve Apgar, of Harris Teachers' College, St. Louis, in English; Frederick Rand Rogers, in Physical Education for Men; Lila Beebe, of Woodland, California, Miss Signe Elizabeth Hagelthorne, Director of Physical Education, San Francisco Public Schools, and Edith Ueland, of the University of California, in Physical Education for Women; James Montrose Duncan Olmsted, of the University of Illinois, and Gertrude Van Wagenen, in Physiology.

The general character of the work done by students during the summer quarter is eminently satisfactory. There are fewer distractions and the students settle down under the unusually pleasant climatic conditions to a quarter of serious and interesting work. The advent into our community of stimulating faculty men from other institutions is a strong factor in our own intellectual development.

STUDENTS

ATTENDANCE

The total enrolment for the year was 3,439, including summer registration, 490 more than in 1919-20. By major departments these were distributed as follows:

Bacteriology and Experimental Pathology.....	16
Botany	18
Chemistry	205
Economics	508
Education—	}
—Graphic Art	
	237

Engineering—Civil	91
—Electrical	8
—Mechanical	215
English	185
Geology	201
Germanic Languages	6
Greek	5
History	118
Latin	15
Law—Professional }	226
—Pre-Legal }	
Lower Division	933
Mathematics	21
Medicine	145
Mining and Metallurgy	16
Philosophy	13
Physics	12
Physiology and Histology	62
Political Science	38
Pre-Clinical	22
Pre-Medical	30
Pre-Nursing	3
Psychology	19
Romanic Languages—French }	99
—Spanish }	
Zoology—	31
—Entomology	14
Total	*3512

REVISION OF ENTRANCE REQUIREMENTS

The increasing number of students applying for admission, coupled with the limitations in the number of students accepted for registration, has presented a most complicated and difficult problem. The aim of the University is to be absolutely fair and to provide an equal chance for admission to all applicants. In order to make provision for students from all parts of the country and to give any properly prepared student a chance to enter Stanford, even though his preparatory work has not been of the usual character taken by the majority of those making application, preference has been given to those students who have passed the comprehensive examinations of the College Entrance Examination Board. The sons and daughters of alumni are placed in a favored class.

* Of this total, 73 were also registered as majors in other departments.

The Academic Council at its meeting on February 21, 1921, adopted the following entrance requirements:

REVISION OF ENTRANCE REQUIREMENTS

Adopted by the Academic Council, February 21, 1921

MINIMUM REQUIREMENTS FOR ADMISSION

FIRST-YEAR STANDING

The minimum requirements for first-year undergraduate standing are measured in terms of high school preparation, and imply the completion of a regular four years' high school course, or its equivalent, amounting to *fifteen units* (including at least two units in English). These requirements may be fulfilled *without examination*, or *on examination*, as provided below. But since the University holds no entrance examinations and does not admit students with entrance deficiencies, candidates are advised, in general, to remain in the preparatory school until the full requirements have been met.

Without examination. The minimum requirements for first-year undergraduate standing are fulfilled by candidates who have been duly graduated from approved preparatory schools with recommending (certificate) grades in subjects aggregating fifteen units (including at least two units in English), and provided they are recommended also on the basis of character and seriousness of purpose. In schools which do not distinguish between a passing and a recommending (certificate) standard, no subject will be credited unless the grade be at least five per cent higher than the lowest passing grade.

Holders of New York Regents' Diplomas granted *with credit*, and candidates from foreign countries who present credentials equivalent to those named and whose command of written and spoken English shall be deemed adequate for purposes of college study, may also be placed in this category.

On examination. The minimum requirements for first-year undergraduate standing are fulfilled by candidates not graduates of approved preparatory schools who have passed the examinations of the College Entrance Examination Board in subjects (including English) aggregating fifteen units. Partial fulfillment of requirements without examination (that is, graduation and recommendation on grounds of fitness, but with less than fifteen units of recommending grade) may be supplemented by examination, through the College Entrance Examination Board, in the subjects necessary to make up the required fifteen units. If recommended on grounds of fitness and after the completion of a full preparatory course, such candidates may take the Comprehensive instead of the ordinary examinations of the Board.

ADVANCED STANDING

The minimum requirements for advanced standing classification are fulfilled by candidates whose previous record has been thoroughly satis-

factory and who present credentials covering first-year requirements and the completion of one or more quarters of college work.

GRADUATE STANDING

The minimum requirements for graduate standing are fulfilled by graduates of colleges and universities of recognized standing whose credentials evidence ability and promise, and who expect to become candidates for advanced degrees, or for the high-school teacher's certificate, or who purpose to pursue regular advanced, professional, or research courses.

ADMISSION OF MEN

There is no restriction upon the number of matriculants in graduate standing, nor in advanced standing where credentials cover full entrance requirements and 67 or more units of college work. Approved candidates in this group are assured of admission at the beginning of any quarter.

The number of matriculants in first-year undergraduate standing, and in advanced standing with less than 67 units of college work, is limited to 450 for the autumn quarter and 50 each for the two succeeding quarters. For the present no limit (below 450) is placed upon summer matriculants; but matriculation for the summer quarter does not necessarily insure registration for succeeding quarters, and if more than 50 summer matriculants re-register for the autumn quarter the number allotted to the autumn quarter will be correspondingly reduced.

The selection of candidates within the limited group will be made immediately after August 1st, December 20th, March 1st, and June 1st, respectively, for the next succeeding quarter. If the number of candidates fulfilling minimum requirements does not exceed the permitted number of matriculants all such candidates will be placed on the eligible list; if unfilled places remain, other candidates will be added to the list from time to time as approved credentials are received and as the Committee may determine. For such unfilled places (after the dates named) applications may also be considered from men of considerable maturity, twenty-one years of age or older, who do not fulfill the minimum requirements for undergraduate standing but whose incomplete preparation has been supplemented by practical training and experience of distinct educative value. Such candidates if admitted are special students and not candidates for a degree except as noted on page 97 of the Register for 1920-21.

In case the number of candidates fulfilling minimum requirements exceeds the permitted number of matriculants, a preferred list will be made up immediately after the dates named, which will include (1) candidates who have passed the comprehensive examinations of the College Entrance Examination Board with an average grade of 75 in four subjects; (2) sons of alumni of the University; (3) persons awarded regional scholarships prior to the dates named; (4) other candidates, sufficient to make up approximately the permitted number, selected on the basis of superior fitness, taking into account force of character, courage, honesty, scholarship, exceptional qualifications of any kind, including qualities of leadership, influence exerted among schoolmates and associates, physical vigor, etc.

ADMISSION OF WOMEN

The Founding Grant of the University, as amended May 31, 1899, directs, "that the number of women attending the University as students shall at no time ever exceed five hundred."

The same scholarship standards and requirements apply as in the case of men, but with special regulations regarding the selection of candidates, as provided below.

Under the 500 limit the number of places open to new women students for the October matriculation is approximately 140. Thirty-five of these are provisionally assigned to approved candidates for graduate standing; 105 to approved candidates for undergraduate standing. Proportional assignments will be made for the winter and spring quarters. Under the 500 limit it is at present possible to receive less than one-fourth of the number fulfilling the minimum requirements. Selection will be made as follows:

The credentials of all candidates for undergraduate standing who have fulfilled the minimum requirements will be canvassed immediately after July 20th, November 15th, March 1st, and June 1st, respectively, for the next succeeding quarter, and a preferred list will be made up which will include (1) candidates who have passed the comprehensive examinations of the College Entrance Examination Board with an average grade of 75 in the four subjects; (2) daughters of alumni of the University and of members of the academic staff; (3) other candidates sufficient to make up approximately the permitted number, selected on the basis of superior fitness, taking into account force of character, courage, honesty, scholarship, exceptional qualifications of any kind, including qualities of leadership, influence exerted among schoolmates and associates, physical vigor, etc.

The credentials of candidates for graduate standing will be canvassed immediately after September 1st, December 20th, March 1st, and June 1st, respectively. Selection, up to the assigned number, will be made on the basis of superior fitness.

Women once admitted to the University, etc. (as at present).

The lists for the summer quarter, etc. (as at present).

Approximately thirty-five places assigned to new undergraduate women for the October matriculation will be filled on the basis of priority of application under the regulations in force before February 21, 1921, and until the applications received by that date are exhausted. No applications received later than February 21, 1921, will be considered for this list. Proportional assignments on the basis of priority of application will be made for the winter and spring quarters.

REGIONAL SCHOLARSHIPS

Special preferences are offered in the above entrance requirements for those students selected by the alumni of different regions as regional scholars. Naturally if such students are to be preferred, practically above all others, they must meet a standard

that assures them of success. The Committee on Scholarship has made the following general regulations regarding the regional scholarships:

Voted that regional scholarships will be awarded only to those persons who meet the minimum requirements for entrance to the University, who ranked in the upper one-fifth of their preparatory school graduating class, and who need this help in order to enter the University.

Voted that nominations for regional scholarships will be received from the organized committee of the alumni of the region.

It was the opinion of the Committee that the regional alumni committee be requested in making nominations to consider, in addition to (a) scholarship, also (b) exceptional ability of any kind, (c) physical vigor, (d) force of character, courage, honesty and the like, (e) qualities of leadership and influence exerted among schoolmates and associates.

Voted that the continuance of the scholarship shall be dependent on the holder maintaining in the University the minimum record required for the continuance and re-award of other scholarships awarded by the Scholarship Committee.

CHANGES IN STUDENT PROBATION

There has been a constant tendency in the development of the University to multiply methods and rules in the hope of preventing the weak student from becoming disqualified. With more and more experience with the weak student more and more rules developed. Such action seemed inconsistent with the more recent policies of the University in the way of student government and the Honor System. It seemed wisest to stop the coddling and hampering policy of preventing a student who was weak in his studies from taking part in student activities but to place the problem, after proper warning, back on the student himself. There was constant difficulty because of the uncertainties as to whether students could take part in athletic and other contests due to the fact that through the rules of probation their status might be changed at any time. At the same time certain impossible types of social probation were attempted. After careful study the Scholarship Committee determined that it was wise to dispense with the penalty side of probation and place the student on his own responsibility. Accordingly, the following recommendation was, upon recommendation of the Committee, passed by the Academic Council:

The Committee on Scholarship has voted to recommend to the Council (1) the abolition of "failed" or "first failure" as a stage between pro-

bation and disqualification and (2) the repeal of all legislation making students on probation ineligible to participate in student activities. These two steps are but parts of a change in the scholarship regulations, which the Committee has agreed upon. The other steps the Committee has already been empowered to take by the Council. The main purposes of the change are two: (1) to raise the requirements for remaining in the University and thus to either improve the work of the students of low standing or eliminate them, (2) to remove certain administrative difficulties and inequalities in the operation of the present rules.

Specifically the following changes are proposed: (a) "Failed," or first failure, as a stage between probation and disqualification is to be abolished. (b) The line at which a student is disqualified is to be raised. During his first or second quarter in the University he will have to make at least ten counts (units and grade points added) instead of seven. During subsequent quarters he must make a minimum of fifteen instead of twelve counts. The deficiency in grade points on his entire record which will disqualify will be as follows:

Quarter	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Deficiency	0	20	20	18	16	14	12	10	8	6	5	4	3	2	1

(c) If a student incurs probation for any three successive quarters, after the first two quarters of residence he will be disqualified. (d) Probation will no longer render a student ineligible to take part in any student or university activity. *It will remain as a warning, and under change (c) above, it will become a serious step toward disqualification.* (The increased importance of probation makes it very necessary that the faculty should report students at mid-quarter who are below proper standing so that they may be notified.)

That these changes will require students of low standing to increase their accomplishment or obtain their education elsewhere is obvious. This is greatly to be desired. Stanford with its necessary limit upon numbers may well insist that its special opportunities shall be open only to those who are able and willing to make good use of them. The education of earnest and capable students should not be impaired by a waste of the time of both instructor and class upon incapable or lazy members. Serious students must not be kept out of the University by the presence of the indolent. The money spent in attempting to instruct students who make no real use of their university opportunities probably exceeds one hundred thousand dollars a year; this must be saved so far as possible. The Committee will continue to modify the operation of the rules in the case of students who have been handicapped by illness, outside work, misdirection, and like causes of failure. Students who would be disqualified for this quarter by the new, but not by the old standards, will be given until June, 1922, to remove their deficiencies.

Ineligibility to take part in student activities as a penalty for poor scholarship has hardly justified itself. One hundred and fifty-three students returned on probation for the fall quarter of 1920-21. At the end of that quarter thirty-three were disqualified, five were failed and fifty-four remained on probation for the winter quarter. In other words a total of

92 again incurred scholarship action. At the end of the winter quarter, out of the same 153, fifty-one incurred scholarship action. These added to the thirty-three disqualified at the end of the fall quarter made 84 whom probation seems to have done little to help. When we remember that 19 more had left college voluntarily, we see that 103 out of 153 were definitely not helped by scholarship penalties. The other fifty were on the average helped but little.

Again, the ineligibility rules require a considerable amount of work for their proper enforcement which after all cannot in the nature of things be perfect. They by no means affect all students on probation—only the office-holders, athletes, actors, and publishers feel them. Other activities such as dancing, card-playing, motoring, and week-end trips the Committee cannot feasibly control. Higher disqualification rules will reach excessive indulgence in the last-mentioned activities to some extent. Finally, the ineligibility regulations caused a certain amount of irritation which may well be avoided. If those whom we are compelled to irritate are removed from the University, we will have gained something in university peace and at an expense in weak or indifferent students which we may pay without bankruptcy.

The retention of ineligibility for first-year students or lower division students was considered and discarded as involving substantially the same administrative difficulties and in the light of experience not likely to be very effective. It is proposed to have a special letter from the President sent to all entering students calling their attention to the regulations concerning scholarship, to the fact that students must assume responsibility for their own scholarship and to that end avoid activities or pleasures which interfere unduly with their work.

INTELLIGENCE TESTS

With us, as with all universities, there is constant dissatisfaction with the results of our marking system in determining the qualities or qualifications of individuals. We are making attempts in various directions to make our records as accurate and dependable as possible. We are also endeavoring to personalize the record of the individual student. The plan adopted by the Lower Division of having photographs of the students on their registration cards and also available for the Dean of Men and Dean of Women is a step in this direction. By action of the Academic Council all members of the entering freshman class are now given an intelligence test along the lines laid out by Professor Terman. We plan to compare the results in examination with those of the intelligence test in the hope that we can improve our methods of evaluation of the student. For the present we do not anticipate relying upon the intelligence test, but the

Committee on Scholarship will probably make use of it in doubtful cases.

HONOR SYSTEM

The Honor System in examinations has been adopted by the University through the following legislation of the Academic Council:

RECOMMENDATIONS

WITH RESPECT TO THE HONOR SYSTEM IN EXAMINATIONS

First: That approval be given to the plan for student responsibility for honesty in examinations as follows:

THE HONOR SYSTEM

1. Responsibility for honesty in the conduct of examinations is assumed by the students of the University, such responsibility to be known as the Honor System.

2. The primary responsibility for the Honor System rests upon each individual student who is pledged not to receive or give aid in examinations.

3. Collective responsibility for the Honor System within a department of the University should be accepted by the major students of that department. Through existing departmental organizations or otherwise such major students should take special care that the system is conserved and strengthened within the department. It is hoped that they may receive the encouragement and coöperation of the instructors in the department in their efforts to this end.

4. The Student Councils shall have general supervisory control over the conduct of examinations, and may adopt regulations and suggestions for the same. Such control may be exercised through the department groups of major students, wherever such method is found to be effective. But when need arises, the Councils shall take direct control of the conduct of examinations in a particular course or group of courses.

5. The Student Councils shall, with the approval of the President of the University, prepare a statement for all new students to sign, such statement to be included among the Registrar's matriculation blanks; and rules and suggestions for the conduct of examinations to be printed upon the examination blanks furnished by the University.

6. Individual infractions of the Honor System shall be dealt with by the Student Councils in the same manner as other cases of discipline.

7. The upper division students shall create a committee to be known as the Honor System Committee, which shall arrange for assemblies of new students early in each quarter for the purpose of explaining the Honor System; shall promote the organization of departmental groups of major students to conserve the system within the departments; shall prepare a statement concerning the Honor System to be printed in the freshman handbook; and shall assume leadership in developing and strengthening student opinion and responsibility with regard to the Honor System.

Second: That the following legislation be enacted:

1. Responsibility for honesty in examinations is hereby placed upon the students of the University.

2. The instructor shall provide a room where the examination may be held without crowding, or two sets of questions may be used in alternate seats, or examinations in two different courses may be given in the same room, the students in different courses alternating. After the questions have been presented and inquiries answered the instructor shall withdraw from the room.

This legislation was adopted upon the request of some seven-hundred students, each one of whom signed an individual card asking that the Honor System be installed. For many years an honor system has been in effect in some departments, notably in Law, and has been a pronounced success. While no doubt there will be some difficulties in the administration of this plan, I consider it one of the greatest steps forward that has yet been taken in the University. When it is thoroughly established and becomes a part of the life of the students, it will mean that the graduates of Stanford can depend upon each other whenever and wherever they meet as the years go by. Any man or woman who has spent four years or more under the Honor System is bound to have developed traits of character that will last throughout life.

TUITION

On November 5, 1920, the general tuition fee was raised to \$75 per quarter, in accordance with the following resolution of the Trustees:

That the tuition fees for new students entering the University for the fall quarter of 1921 and thereafter are hereby fixed at the sum of \$75 a quarter. A method of deferred payment by working students to be recommended to the Board by the Finance Committee.

TUITION NOTES.

The plan adopted December 24, 1920, upon recommendation of the Committee, was as follows:

That upon the installation of the new fees, deserving students, upon the approval of the President of the University, be permitted to give seven year notes in payment of their tuition fees, such notes to bear no interest until their maturity but in default of payment at maturity to bear interest at 6%.

This offers the most liberal form of scholarship of any university. About 300 students avail themselves of these notes, which are granted without scholarship requirements.

FEE SCHEDULE

The following changes in the fee schedule of the University, aside from the general tuition fee of \$75 per quarter for the year beginning October 1, 1921, were adopted April 29, 1921:

1. That the tuition fee for all students regularly registered in the School of Medicine be \$85 per quarter, that the special fee of \$5 per quarter for the first five quarters be eliminated, and that a Guild fee of \$2 per quarter be charged for each quarter. Medical students desiring membership in the Stanford Union, Women's Club House, or Associated Students, or the use of the Gymnasia shall pay the usual fees designated for these purposes. There shall be no other fees aside from those listed above, except that a deposit to cover breakage or loss of apparatus and materials may be required in any department or division, such deposits being returnable, less charges for breakage, loss, or wear and tear of apparatus, or for materials used. The total deposits for this purpose may vary from \$10 to \$20 per annum.

2. That the tuition fee for all undergraduate students in law be the same as for other undergraduate students in the University and that the tuition fee for graduate students in law be fixed at \$65 per quarter, no other fee being required, except the Guild fee of \$2 per quarter and special fees required for special courses. Law students wishing to avail themselves of membership in the Stanford Union, Women's Club House, Associated Students, or the Gymnasia, shall be entitled to these privileges after paying the usual fees.

3. Graduate School. That the tuition fee for bona fide graduate students, except in the Departments of Law and Medicine, shall be \$50 per quarter. All graduate students shall be required to become members of the Students' Guild and pay a fee of \$2 per quarter. All such students may obtain the privileges of the Stanford Union, Women's Club House, Associated Students, or the Gymnasia by paying the fees for these purposes.

GIFTS

A new period has been reached in the history of the University, as gifts are being received in sufficient volume to become a considerable factor in the annual expenditures of the University. They have likewise made possible the extension of the University into new and important fields. In the name of the University I wish here to record our grateful appreciation. The list of gifts is given under a separate heading.

The departmental and other special reports follow.

Respectfully submitted,

RAY LYMAN WILBUR,
President.

September 1, 1921.

REPORT OF THE TREASURER

OF STANFORD UNIVERSITY FOR THE FISCAL YEAR
ENDING AUGUST 31, 1921.

TO THE HONORABLE BOARD OF TRUSTEES
OF STANFORD UNIVERSITY:

The accompanying schedules show the financial condition of our Endowment as of August 31, 1921.

The Finance Committee has, during the year, increased our income at the rate of \$33,297.50 per annum. Exchanges on bonds for those of a higher yield and of extended maturity account for \$12,297.50 of this, and \$21,000.00 was through renewals of mortgages at increased rates of interest. As these latter matured toward the close of the year, their earnings are only partially reflected in the report.

While this increase in income was helpful and gratifying, it is but conservatism to call attention to the fact that rates of interest are gradually falling and that we may not be able to maintain it for an indefinite period.

The financial demands upon us, however, are constantly increasing, as is logical in a vigorous educational institution, and, if we are to fulfill the promise that is in us, the situation emphasizes the urgent need of further additions to our endowment.

TIMOTHY HOPKINS,
Treasurer.

January 20, 1922.

INDEX TO TREASURER'S AND COMPTROLLER'S FINANCIAL TABLES

	Schedule	Page
Assets—Current—Analysis of	C	95, 96
Assets—Investment—Analysis of	E	60, 61
Balance Sheet—Consolidated	A	56, 57; 88, 89
Balance Sheet—Divisional	A1	58, 59; 90, 91
Balance Sheet—Current	A2	92, 93
Bonds and Securities—Acquisitions and Disposals.....	Q	67-71
Bonds—Detail—Schedule of.....	S	75-80
Capital Increase Since Endowment—Analysis.....	N	64, 65
Corporate Stock—Schedule of.....	T	81
Capital Expenditures from Income (not dep'tmental)	I	108
Dividends	T	81
Expenditures—Analysis of	H	102-107
Educational Plant Assets—Detail of.....	L	114-120
Endowments—Schedule of.....	M	62, 63
Gifts—Received and/or Expended.....	P	121-125
Hospitals—Income and Expenditures.....	G	101
Income—Analysis of	F	99, 100
Income—Summary of Expend. and Surplus—Current	B	94
Income from Special Funds—Schedule of.....	P	121-125
Investments—Securities—Summary of	R	72-74
Investment—Lands, Buildings, Equipment.....	O	66
Income Section Educational Plant—Operations.....	J	109
Liabilities—Current Analysis of	D	97, 98
Lands, Buildings and Equipment—Investment.....	O	66
Loans, Unsecured	R	74
Medical Division, S. F.—Income and Expenditures.....	G	101
Operations of Miscellaneous Income Units.....	J1	110, 111
Press—Departmental Operations	J1	111
Plant Investment	L	114-120
Real Estate and Improvements	O	66
Surplus	B-K	94; 112, 113
Stocks	T	81
Securities	S	75-80
Scholarships	P	121-125
Student Loans—Schedule of.....	X	126

SCHEDULE A
Consolidated Balance Sheet as at August 31, 1921.

DESCRIPTION	Detail	Total
ASSETS		
Cash Assets		
Current Funds	\$46,031.41	
Investment Funds	222,486.04	\$268,517.45
Accounts Receivable Assets		
Accounts Receivable	\$53,219.22	
Rents Receivable	— 193.99	
Interest Accrued	294,407.43	347,432.66
Bonds—Pension Fd. (Schs. A-2, pp. 92, 93, and S, pp. 75-80)		52,624.75
Bonds—Employers' Liability Insurance Fund (Schs. A-1, pp. 58, 59, and S, pp. 75-80)		102,635.24
Securities (Schs. E, pp. 60, 61, and R, pp. 72-74)		22,155,896.32
Contracts of Sale		923,625.08
Contracts of Sale—Faculty Housing Fund		143,179.82
Lands, Buildings and Equipment		
Investment (Schs. E, pp. 60, 61, and Q, pp. 67-71)	\$1,177,180.62	
Educ. Plant (Schs. A-1, pp. 58, 59, and L, pp. 114-120)	8,806,275.68	
Income Section Educational Plant	1,243,540.11	11,226,996.41
Other Assets		
Liberty Bonds—Employees	\$211.72	
Bonds as Deposits	1,300.00	
Investment (Sch. E, pp. 60, 61)	33,377.91	34,889.63
Working Assets (Sch. A-2, pp. 92, 93)		164,319.83
Deferred Charges to Operations (Sch. A-2, pp. 92, 93)		7,388.29
Total		\$35,427,505.48

SCHEDULE A
Consolidated Balance Sheet as at August 31, 1921.

DESCRIPTION	Detail	Total
LIABILITIES		
Immediate Demands for Cash (Sch. D, pp. 97, 98)-----		\$71,757.03
Other Liabilities		
Unappropriated Income (Sch. P, pp. 121-125)-----	\$47,042.54	
Loan and Relief Funds (Sch. X, p. 126)-----	5,022.64	
Hospital and Special Funds (Sch. P, pp. 121-125)-----	570.60	
Unclaimed Deposits -----	3,149.66	
Deferred and Contingent-----	11,807.82	67,593.26
Total Liabilities -----		\$139,350.29
RESERVES (Sch. A-2, pp. 92, 93)		
Reserve for Deferred Charges to Operations-----	\$7,388.29	
Other Reserves -----	204,208.50	\$211,596.79
ENDOWMENTS		
Unrestricted Endowments (Sch. M, pp. 62, 63)-----	\$21,237,207.91	
Restricted Endowments (Sch. M, pp. 62, 63)-----	1,270,136.64	
Capital Increase Since Endowment (Sch. N, pp. 64, 65)-----	3,744,149.62	
Endowments Expended on Educational Plant-----	4,242,606.48	
Endowments Borrowed Expended on Educational Plant	167,144.08	30,721,244.73
SURPLUS		
Current Deficit (Schs. A-1, pp. 58, 59, B, p. 94, and K, pp. 112, 113) -----	\$41,211.45	
Surplus Income Expended on Educational Plant-----	4,396,525.12	4,355,313.67
Total -----		\$35,427,505.48

SCHEDULE A-1
Divisional Balance Sheet as at August 31, 1921.

CURRENT ASSETS (Sch. C, pp. 95, 96)		Total
Cash on Hand and in Bank.....		\$46,031.41
Accounts Receivable		347,432.60
Other Assets		156,771.71
Working Assets		164,319.83
Deferred Charges to Operation.....		7,388.29
Total		\$721,943.90
INVESTMENT ASSETS (Sch. E, pp. 60, 61)		Total
Securities (Sch. R, pp. 72-74).....		\$22,155,896.32
Lands, Buildings and Equipment (Sch. Q, pp. 67-71).....		1,177,180.62
Contracts of Sale, Faculty Housing Fund.....		143,179.82
Contracts of Sale		923,625.08
Due from Current Funds.....		412,208.27
Cash in Banks		222,486.04
Other Assets		33,377.91
Income Section—Educational Plant		1,243,540.11
Total		\$26,311,494.17
EDUCATIONAL PLANT ASSETS		Total
Land		\$18,633.66
Buildings and Structures		7,065,989.39
Equipment		1,840,847.48
Improvements		555,854.15
Unsegregated		1,426,705.49
Total		\$10,988,030.17
Less: Educational Plant Assets Transferred to Investment Section.....		2,131,754.49
(Sch. L, pp. 114-120) Total		\$8,806,275.68

SCHEDULE A-1
Divisional Balance Sheet as at August 31, 1921.

CURRENT LIABILITIES (Sch. D, pp. 97, 98)	Total
Immediate Demands for Cash.....	\$71,757.08
Due to Investment Funds.....	412,208.27
Other Liabilities.....	67,593.26
Reserves (Sch. A-2, pp. 92, 93).....	211,596.79
Current Surplus	
Cash in Excess of Immediate Demands for Cash..... — \$25,725.62	
Accounts Receivable in Excess of	
Due to Investment Funds and Other Liabilities..... 188,722.67	
	\$162,997.05
Less: Reserve Other than that for Deferred Charges..... 204,208.50	
Net Deficit	41,211.45
Total	\$721,943.90
INVESTMENT ENDOWMENTS	Total
Unrestricted Endowment (Sch. M, pp. 62, 63).....	\$21,297,207.91
Restricted Endowments (Sch. M, pp. 62, 63).....	1,270,136.64
Capital Increase Since Endowment (Sch. N, pp. 64, 65).....	3,744,149.62
Total	\$26,311,494.17
EDUCATIONAL PLANT ENDOWMENTS AND SURPLUS INCOME EXPENDED	Total
Endowments Expended on Educational Plant (Sch. M, pp. 62, 63).....	\$4,242,606.48
Surplus Income Expended on Educational Plant.....	4,396,525.12
Endowment Funds Borrowed Expended on Educational Plant.....	167,144.08
Total	\$8,806,275.68

SCHEDULE E
Analysis of Investment Assets as at August 31, 1921.

DESCRIPTION	This Year	
	Detail	Total
SECURITIES—UNRESTRICTED		
Bonds (Sch. S, pp. 75-80)		
Railway	\$14,686,700.00	
Street and Interurban	518,000.00	
Other Public Utility	1,523,000.00	
Federal, State, and Municipal	1,384,550.00	
Other Bonds	1,589,801.00	\$19,702,051.00
Corporate Stocks (Sch. T, p. 81)		172,151.00
Mortgage Loans—Real Estate		
City	\$1,449,241.12	
Country	297,209.59	
Campus	52,679.60	1,799,130.31
Loans—Building Fund		314,876.00
Unsecured Loans (Sch. R, pp. 72-74)		26,658.01
Other Securities (Sch. S, pp. 75-80)		20,060.00
Total Unrestricted		\$22,034,946.32
SECURITIES—RESTRICTED		
Bonds—Lane Medical Library Fund (Sch. S, pp. 75-80)		
Railway	\$31,000.00	
Other Public Utility	51,000.00	
Other Bonds	26,000.00	\$108,000.00
Mortgage Loans—Real Estate		
Country		12,950.00
Total Restricted		\$120,950.00
(Schedule R, pp. 72-74) Total Securities		\$22,155,896.32

SCHEDULE E—Concluded
Analysis of Investment Assets as at August 31, 1921.

DESCRIPTION	This Year	
	Detail	Total
LANDS, BUILDINGS AND EQUIPMENT—UNRESTRICTED		
Real Estate and Improvements.....		\$1,172,774.64
Total Unrestricted.....		\$1,172,774.64
LANDS, BUILDINGS AND EQUIPMENT—RESTRICTED		
Real Estate and Improvements		
Lane Medical Library Lands.....		\$4,405.98
Total Restricted.....		\$4,405.98
Total Lands, Buildings and Equip. (Sch. O, p. 66).....		\$1,177,180.62
Contracts of Sale.....		\$923,625.08
Contracts of Sale—Faculty Housing Fund.....		\$143,179.82
Due from Current Funds.....		\$412,208.27
CASH IN BANK—UNRESTRICTED		
Cash in Bank—Commercial		
Union Trust Company—Special Account.....		\$2,635.41
Total Unrestricted.....		\$2,635.41
CASH IN BANK—RESTRICTED		
Cash in Bank—Savings		
London Bank of Australia, Ltd.....		\$219,600.00
Union Trust Bank—Nurses' Home Funds.....		250.63
Total Restricted.....		\$219,850.63
Total Cash in Bank.....		\$222,486.04
Other Assets		
Bond Premium and Disc.—General (Sch. S, pp. 75-80).....		\$23,596.61
Bond Premium and Discount—Lane Medical Library		
Fund (Sch. S, pp. 75-80).....		— 2,011.20
Jewels		6,792.50
Total Other Assets.....		\$33,377.91

SCHEDULE M
Endowments August 31, 1921.

DESCRIPTION	Aug. 31, 1920	Increase	Decrease	Aug. 31, 1921
UNRESTRICTED				
Leland and Jane Lathrop Stanford for General Maintenance (Schs. A, pp. 56, 57, and A-1, pp. 53, 59).....	\$21,297,207.91			\$21,297,207.91
RESTRICTED ENDOWMENTS AND SPECIAL FUNDS				
Endowments				
Jane Lathrop Stanford Endowment—Jewel Fund for Books.....	\$500,000.00			\$500,000.00
C. G. Lathrop, for Medical Library Books.....	5,000.00			5,000.00
Dr. A. Barkan, for Medical Library Books.....	10,000.00			10,000.00
J. Henry Meyer, for Medical Library Books.....	2,500.00			2,500.00
A. Borel, for Medical Library Books.....	2,500.00			2,500.00
Edward Coleman, for Medical Library Books.....	2,500.00			2,500.00
Luther J. Holton, for Medical Library Books.....	500.00			500.00
Henry L. Dodge, for Medical Library Books.....	5,000.00			5,000.00
J. Henry Meyer, in Memory of Antoine Borel.....	6,178.54			6,178.54
Life Membership Subscriptions for Medical Library Maintenance.....	5,300.00			5,300.00
Moses Hopkins Memorial, for Hospital Beds.....	10,000.00			10,000.00
C. G. Lathrop Endowment for Medical School Free Beds.....	10,000.00	\$212.50	\$212.50	10,000.00
Lane Hospital Nurses' Alumnae Association Free Bed Endowment.....	5,000.00			5,000.00
Brodie G. Higley Scholarship Fund.....	3,000.00			3,000.00
C. Annette Buckel Foundation Fellowship.....	3,000.00			3,000.00
The Henry Gibbons, Jr., Library on Obstetrics and Gynecology Endowment.....	1,946.60			1,946.60
Lane Medical Lecture Fund.....	20,000.00			20,000.00
T. W. Stanford Endowment for Psychic Investigation.....	50,000.00			50,000.00
R. F. West Endowment for Lectures on Immortality and Kindred Subjects.....	10,000.00			10,000.00
W. J. Dickey Scholarship Fund.....	10,000.00			10,000.00
Horace Davis Student Loan Fund.....	4,130.59	80.40		4,210.99
John M. Stillman Testimonial Fund.....	82.50			82.50
Lane Medical Library—Sundry Endowments.....		100.00		100.00
Library Fund Hopkins Marine Station.....		269,877.77		269,877.77
T. W. Stanford Endowment for Psychology and Psychic Investigation.....		37,500.00		37,500.00
Chair in Japanese Hist. and Civilization Endow.—Sponsored by Viscount Shibusawa		6,000.00		6,000.00
David Hewes—Free Bed Endowment for Lane Hospital.....				
Total Restricted Endowments.....	\$676,638.23	\$313,770.67	\$212.50	\$990,196.40

SCHEDULE M—Concluded
Endowments August 31, 1921.

DESCRIPTION	Aug. 31, 1920	Increase	Decrease	Aug. 31, 1921
Special Funds				
Levi Cooper Lane Library of Medicine and Surgery Fund.....	\$110,298.81			\$110,298.81
Lane Medical Library—Accumulated Earnings.....	19,798.77		\$5,178.65	14,620.12
Nurses' Home Fund.....	2,433.63	\$104.82		2,538.45
T. W. Stanford Museum Restoration Fund.....	2,334.18	100.10		2,434.28
Memorial Scholarship Fund.....	2,230.58	396.08	300.00	2,326.66
Faculty Housing Fund.....		147,731.92		147,731.92
Total Restricted Special Funds.....	\$137,085.97	\$148,332.92	\$5,478.65	\$279,940.24
Total Restricted Endow. and Sp'l Fds. (Schs. A, pp. 56, 57, and A-1, pp. 58, 59).	\$213,724.20	\$462,103.59	\$5,691.15	\$1,270,133.64
Total Endowments and Special Funds Invested in Assets Other Than Plant (Schs. A, pp. 56, 57, and A-1, pp. 58, 59).....	\$22,110,932.11	\$462,103.59	\$5,691.15	\$22,567,344.55
ENDOWMENTS OF PLANT				
Educational Plant, Lands, Buildings and Equipment, Leland and Jane Lathrop Stanford Medical College Buildings and Grounds, from Cooper Medical College.....	\$3,704,010.49			\$3,704,010.49
Medical Department and Lane Hospital Equipment, from Cooper Medical College.....	94,700.00			94,700.00
Medical Library Lot, from Levi Cooper Lane Library of Medicine and Surgery.....	58,982.50			58,982.50
Books and Furniture, from Levi Cooper Lane Library of Medicine and Surgery.....	18,633.66			18,633.66
Lane Medical Library Building and Furniture, from Funds received from Sale of Assets of the Levi Cooper Lane Library of Medicine and Surgery.....	50,350.00			50,350.00
Thomas Welton Stanford Art Gallery, from Funds Received from Thomas Welton Stanford.....	142,959.14	\$7,684.78		150,643.92
Radium, from Funds from Wm. M. Fitzhugh.....	89,305.91			89,305.91
Anonymous Alumnus New Union Construction Fund.....	12,000.00	64,000.00		12,000.00
Total Endowment of Plant (Schs. A, pp. 56, 57, and A-1, pp. 58, 59).....	\$4,170,921.70	\$71,684.78		\$4,242,606.48
Total Endowments and Special Funds (Sch. A, pp. 56, 57).....	\$26,281,853.81	\$583,788.37	\$5,691.15	\$26,869,951.03

SCHEDULE N

Details of Capital Increase Since Endowment for Year Ended August 31, 1921.

Balance August 31, 1920.....			\$3,489,852.55
INCREASES			
Pacific Improvement Co.—Liquidation Dividends			
Partial Liquidation on dividend of			
\$8.00 per share declared Nov. 12,			
1920, payable in Treas. Securities \$100,000.00			
Liquidation Dividend No. 37 of			
\$14.00 per share, \$22,767.21 paid in			
cash, Balance in \$63,550.00 par			
value Liberty Bonds (various is-			
sues) and \$90,000.00 par value			
Treasury Certificates	175,000.00	\$275,000.00	
Oakland Water Front Co.—Liquidation Dividend			
No. 14 of \$3.00 per share.....		21,822.00	
Ione Coal and Iron Co.—Liquidation Dividend of			
\$1.25 per share		10,000.00	
Sacramento Northern Railway Co.—Proceeds on			
sale of 300 shares 1st Preferred Stock @ \$27.50.			
Stock not recorded on books when acquired in			
1919 at Northern Electric Co. reorganization....		8,250.00	
Profit on Sale of Block "D," Versailles Tract,			
Oakland, to Geo. H. Noble.....		4,521.00	
Profit on sale of Securities sold in 1919 and 1920			
and profits taken into Income, and should have			
been Capital Increase Since Endowment			
U. S. Liberty Bonds.....	\$99.75		
American Foreign Securities.....	2,156.70		
Province of New Foundland.....	240.50		
Anglo-French 5s	2,758.62	5,253.57	
Profit on sale of \$50,000.00 Pacific Gas and Elec-			
tric Co. 5-yr. 7 per cent Coll. Trust Conv. Gold			
Bonds		650.00	
Increases for Year.....			\$325,498.57
Forwarded			\$325,498.57
			\$3,489,852.55

SCHEDULE N—Concluded

Details of Capital Increase Since Endowment for Year Ended August 31, 1921.

Carried Forward		\$325,498.57	\$3,489,862.55
DECREASES			
Notary Fee and Documentary Stamps on Deed to Lars Peterson, being part of Tract of Alameda Lands	\$3.00		
One hundred shares of Rocky Mountain Coal and Iron Co. stock written off—Final liquidation dividend received	100.00		
Notary Fee, acknowledgment of assignment City of Boston Bonds sold in 1920	1.00		
Loss on sale of \$50,000.00 Province of Ontario Bonds due Nov. 15, 1927	1,605.00		
Loss on sale of \$500,000.00 Northern Pacific Great Northern 4 per cent Bonds	26,014.40		
Loss on sale of \$300,000.00 Spring Valley Water Co. 4 per cent Bonds	22,351.50		
Loss on sale of \$100,000.00 American Telephone & Telegraph Co. 6 per cent Notes due Oct. 1, 1922 ..	2,440.00		
Loss on sale of \$50,000.00 City of Boston Bonds sold in 1920 and loss charged against Income, and should have been Capital Increase Since Endowment	786.60		
Loss on exchange of \$100,000.00 Pacific Gas and Electric Co. 5-year 7 per cent Conv. Gold Bonds ..	450.00		
Loss on exchange of \$86,600.00 Sacramento North- ern Ry. 5 per cent Bonds for \$69,200.00 Western Pacific Ry. 1st Mortgage 5 per cent Bonds	17,320.00		
Commission on sale of Alameda Property Sold in 1916	130.00		
Decreases for Year		\$71,201.50	
Net Increase for Year			254,297.07
Total for Year Ended August 31, 1921 (Schs. A, pp. 56, 57, and A-1, pp. 58, 59) ..			\$3,744,149.62

SCHEDULE O

Lands, Buildings, and Equipment—Investment Real Estate and Improvements for
Year Ended August 31, 1921.

UNRESTRICTED	Detail	Total
City Property		
San Francisco		
Buckley Property, 1228-1232 Market St.	\$79,888.30	
University Club Lot, Powell and California Sts.	15,000.00	
University Club Building and Improvements, Powell and California Sts.	140,818.44	\$235,656.74
Alameda		
Llewellyn Tract, 2 Blocks on Marsh.	\$1,500.00	
Versailles Tract		
Estimated Values		
Block E.	\$7,465.50	
F.	3,555.00	
G.	2,844.00	
H.	711.00	
I.	711.00	
J.	355.50	
K.	1,422.00	17,064.00
		18,564.00
Oakland		
C. Annette Buckel Bldg. and Lot, at 952 Fourteenth St.		3,000.00
Total City Property.		\$257,220.74
Country Property		
Marin County		
Undivided ½ interest in Shafter Ranch.	\$25,559.52	
Colusa, Glenn, and Madera Counties		
Pacific Improvement Co. 5/28ths Tract.	1,780.00	
Santa Clara and San Mateo Counties		
Adjacent to Palo Alto Farm		
Spring Valley-Searsville Lake, 265.098 Acres.	48,238.25	
Folger Tract Searsville Lake, 5.38 Acres.	2,651.15	
Water Development—Searsville, etc.	18,243.71	
Nash Field Lot 78.	3,470.00	
Lots 76 and 77, Strip Between County Road and S. P. Co. Tracks.	4,201.95	
½ of Lot 89, P. A. Farm.	1,250.00	
Coon Tract.	50,000.00	
Felt Tract.	75,000.00	
Seale Tract Lots 39 and 40.	33,519.50	
Felt Reservoir.	3,402.99	
P. A. Farm and Improvements, Less \$200,000.00 Valuation on Campus.	648,176.83	
Total Country Property.		\$315,553.90
Total Unrestricted.		\$1,172,774.64
RESTRICTED		
Lane Medical Library Funds		
Folsom Street Lot—San Francisco.		\$4,405.98
Total Lands, Buildings, and Equipment—Investment Section (Schs. A, pp. 56, 57, A-1, pp. 58, 59, and E, pp. 60, 61).		\$1,177,180.62

SCHEDULE Q
Analysis of Acquisitions and Disposals of Bonds and Securities During the Year Ended August 31, 1921.

	Mature	Par Value	Purchase Price	Discount
GENERAL FUNDS				
Acquisitions				
U. S. Liberty Bonds 2nd Loan 4½%.....	11-15-42	\$70,000.00	\$59,587.50	\$10,412.50
U. S. Liberty Bonds 2nd Loan 4½%.....	11-15-42	475,000.00	404,942.60	70,057.40
U. S. Liberty Bonds 2nd Loan 4½%.....	11-15-42	1,000.00	868.75	141.25
U. S. Liberty Bonds 2nd Loan 4½%.....	11-15-42	3,000.00	2,580.00	420.00
U. S. Liberty Bonds 2nd Loan 4½%.....	11-15-42	7,000.00	6,028.75	971.25
Standard Oil Company of California 7% Gold Debenture.....	1-1-31	20,000.00	19,900.00	100.00
Pacific Gas & Electric Co. 20 yr. 7½ 1st and Refund. Mtg. Gold Bonds.....	12-1-40	17,000.00	16,745.00	255.00
Pacific Gas & Electric Co. 20 yr. 7½ 1st and Refund. Mtg. Gold Bonds.....	12-1-40	25,000.00	24,300.00	700.00
Pacific Gas & Electric Co. 20 yr. 7½ 1st and Refund. Mtg. Gold Bonds.....	12-1-40	50,000.00	49,250.00	750.00
Province of Ontario, Dominion of Canada, 6% Definitive Bonds.....	11-15-37	50,000.00	47,145.00	2,855.00
Northwestern Bell Telephone Company 7% 1st Mtg. 20 yr. Gold Bonds, Ser. A.....	2-1-41	280,000.00	270,300.00	9,800.00
U. S. Liberty Bonds 1st Loan Conv. 4¼%.....	6-1-47	900.00	784.12	115.88
U. S. Liberty Bonds 2nd Loan Conv. 4¼%.....	11-15-42	3,600.00	3,069.15	500.85
U. S. Liberty Bonds 3rd Loan Conv. 4¼%.....	9-15-28	9,350.00	8,428.68	923.32
U. S. Liberty Bonds 4th Loan Conv. 4¼%.....	10-15-38	15,400.00	13,898.00	1,502.00
U. S. Liberty Bonds 5th Loan Conv. 4¼%.....	5-20-23	34,300.00	33,442.50	857.50
San Joaquin Light & Power Corp. 7% Unitizing and Refunding Mtg. Bonds.....	3-1-51	100,000.00	97,000.00	3,000.00
Market Street Railway Co. 6% 5 yr. Collateral Trust Bonds.....	4-1-26	4,000.00	3,600.00	400.00
Western Pacific Railway Co. 5% 1st Mtg. Bonds.....	3-1-46	69,200.00	69,200.00	
General Petroleum Corp. 7% Sinking Fund Gold Notes.....	2-15-31	6,000.00	5,925.00	75.00
Republic of France 7½% Non-Callable 20 yr. Bonds.....	6-1-41	102,500.00	96,862.50	5,637.50
Galveston, Harrisburg & San Antonio, M. & P. Division.....	5-1-31	50,000.00	44,500.00	5,500.00
Total General Funds.....		\$1,393,250.00	\$1,277,775.55	\$115,474.45

SCHEDULE Q—Continued
Analysis of Acquisitions and Disposals of Bonds and Securities During the Year Ended August 31, 1921.

	Mature	Par Value	Purchase Price	Discount
LANE FUNDS				
Acquisitions				
Standard Oil Co. of N. Y. 7% Gold Debentures.....	1- 2-30	\$5,000.00	\$2,992.50	\$7.50
General Petroleum Corporation 7% Sinking Fund Gold Notes.....	2-15-31	3,000.00	2,992.50	\$7.50
Total Lane Funds.....		\$5,000.00	\$5,955.00	\$45.00
EMPLOYERS' LIABILITY INSURANCE FUND				
Acquisitions				
Standard Oil Co. of California 7% Gold Debentures.....	1- 1-31	\$5,000.00	\$7,980.00	\$20.00
PENSION FUND				
Acquisitions				
U. S. Liberty Bonds 4th Issue 4½%.....	10-15-38	\$5,000.00	\$4,468.76	\$531.24
U. S. Liberty Bonds 4th Issue 4½%.....	10-15-38	10,400.00	9,307.99	1,092.01
U. S. Liberty Bonds 4th Issue 4½%.....	10-15-38	1,500.00	1,344.37	155.63
U. S. Liberty Bonds 4th Issue 4½%.....	10-15-38	100.00	88.38	11.62
Standard Oil Co. of California 7% Gold Debentures.....	1- 1-31	15,000.00	14,962.50	37.50
Standard Oil Co. of New York No. M-3103-4 Serial Gold Debentures.....	1- 2-30	2,000.00	1,995.00	5.00
Los Angeles Gas & Electric Co. 7% Gold Bonds Series A.....	3- 1-26	16,000.00	15,680.00	320.00
General Petroleum Corp. 7% Sinking Fund Gold Notes.....	2-15-31	5,000.00	4,937.50	62.50
Total Pension Fund.....		\$55,000.00	\$52,784.50	\$2,215.50

REPORT OF THE TREASURER

SCHEDULE Q—Continued
Analysis of Acquisitions and Disposals of Bonds and Securities During the Year Ended August 31, 1921.

	Mature	Par Value	Purchase Price	Discount
OTHER SECURITIES				
Acquisitions				
U. S. Certificates of Indebtedness Series T. J. 1921	6-15-21	\$20,000.00	\$20,000.00	
Bankers Acceptance, Acceptor Chemical National Bank	1- 7-21	25,000.00	25,000.00	
Bankers Acceptance, Acceptor National Bank of Commerce, New York		25,000.00	25,000.00	
Treasury Securities Nos. 9286 to 9275, \$10,000 each, Partial Liquidation Dividend of \$8 a share of P. I. Co.		100,000.00	100,000.00	
Treasury Certificates, Partial Liquidation Dividend of \$14 a share P. I. Co.		35,000.00	35,000.00	
Treasury Certificates, Partial Liquidation Dividend of \$14 a share P. I. Co.		30,000.00	30,000.00	
Treasury Certificates, Partial Liquidation Dividend of \$14 a share P. I. Co.		25,000.00	25,000.00	
Western Pacific Ry. Co. Script Certificate, Partial Liquidation Dividend P. I. Co.		80.00	80.00	
Total Other Securities		\$200,080.00	\$200,080.00	
Total Acquisitions—All Funds		\$1,722,330.00	\$1,604,575.05	\$117,754.95

SCHEDULE Q—Continued
Analysis of Acquisitions and Disposals of Bonds and Securities During the Year Ended August 31, 1921.

	Mature	Par Value	Selling Price	Book Value	Loss or — Gain
GENERAL FUNDS					
Disposals					
Northern Pacific Great Northern 4%.....	7- 1-21	\$500,000.00	\$473,743.10	\$493,757.50	\$29,014.40
Pacific Gas & Electric 7's Coll. Tru. Conv. Gold Bonds.....	5- 1-25	25,000.00	24,300.00	24,300.00	
Pacific Gas & Electric 7's Coll. Tru. Conv. Gold Bonds.....	5- 1-25	50,000.00	49,250.00	48,600.00	— 650.00
Province of Ontario 5½% Bonds.....	4-15-22	50,000.00	47,870.00	49,475.00	1,605.00
Spring Valley Water Co. 4% Bonds.....	12- 1-23	800,000.00	270,000.00	232,351.50	23,351.50
Pacific Gas & Electric Co. 5 yr. 7's Coll. Tr. Conv. Gold Bonds.....	5- 1-25	100,000.00	96,750.00	97,200.00	450.00
Omnibus Cable 6% Bonds.....	- -18	4,000.00	4,000.00	4,000.00	
Sacramento Northern Railway 5%.....	7- 1-37	86,600.00	69,280.00	86,600.00	17,320.00
American Telephone & Telegraph 6% Notes.....	- -22	100,000.00	97,000.00	96,440.00	2,440.00
Century Club Callable.....	Serially	100.00	100.00	100.00	
Hester School District.....	7- 1-21	2,000.00	2,000.00	2,000.00	
Total General Funds.....	8- 1-21	\$1,217,700.00	\$1,134,293.10	\$1,203,324.00	\$89,530.90

REPORT OF THE TREASURER

SCHEDULE Q—Concluded
Analysis of Acquisitions and Disposals of Bonds and Securities During the Year Ended August 31, 1921.

	Mature	Par Value	Selling Price	Book Value	Loss or — Gain
OTHER SECURITIES					
Disposals					
Bankers Acceptance—Acceptor, Chemical National Bank		\$25,000.00	\$25,000.00	\$25,000.00	
Bankers Acceptance—Acceptor, National Bank of Com., N. Y.		25,000.00	25,000.00	25,000.00	
Treasury Securities Nos. 9266 to 9275, \$10,000 each		100,000.00	100,000.00	100,000.00	
U. S. Certificate of Indebtedness Series T. J. 1921		13,000.00	13,000.00	13,000.00	
U. S. Certificate of Indebtedness Series T. J. 1921		7,000.00	7,000.00	7,000.00	
Treasury Certificates		35,000.00	35,000.00	35,000.00	
Treasury Certificates		30,000.00	30,000.00	30,000.00	
Treasury Certificates		5,000.00	5,000.00	5,000.00	
Total Other Securities		\$240,000.00	\$240,000.00	\$240,000.00	
Total Disposals		\$1,457,700.00	\$1,374,293.10	\$1,443,824.00	— \$83,530.90

SCHEDULE R
Summary of Investments in Securities for the Year Ended August 31, 1921.

	Par Value	Unamortized Premium or Discount	Book Value
BONDS			
Railway			
General Funds	\$15,124,200.00	\$261,314.29	\$14,948,014.29
Less: Bonds at par, Internat. Ry. Cent. Amer., \$875,000.00 on Books, at \$437,500.00.	437,500.00		
Lane Funds	\$14,686,700.00	\$261,314.29	\$14,948,014.29
	31,000.00		31,000.00
Total Railway Bonds	\$14,717,700.00	\$261,314.29	\$14,979,014.29
Street and Interurban Railway			
General Funds	\$518,000.00	— \$80,987.90	\$437,062.10
Other Public Utility			
General Funds	\$1,523,000.00	— \$39,942.13	\$1,483,057.87
Lane Funds	51,000.00	— 1,794.50	49,205.50
Employers' Liability Insurance Fund	18,000.00	— 366.21	17,633.79
Pension Fund	16,000.00	— 294.40	15,705.60
Total Other Public Utility Bonds	\$1,608,000.00	— \$42,347.24	\$1,565,652.76
Federal, State, and Municipal			
General Funds	\$1,384,550.00	— \$79,487.86	\$1,305,062.14
Employers' Liability Insurance Fund	6,000.00		6,000.00
Pension Fund	17,000.00	— 1,737.40	15,262.60
Total Federal, State, and Municipal	\$1,407,550.00	— \$81,225.26	\$1,326,324.74

SCHEDULE R—Continued
Summary of Investments in Securities for the Year Ended August 31, 1921.

	Par Value	Unamortized Premium or — Discount	Book Value
Other Bonds			
General Funds	\$1,614,800.00		
Less: Bonds at below par \$25,000.00, Fuente Coal Co., at \$1.00	24,999.00		
Lane Funds	\$1,589,801.00	— \$32,989.79	\$1,557,411.21
Employers' Liability Insurance Fund	26,000.00	— 216.70	25,783.30
Pension Fund	29,000.00	— 19.04	28,980.96
	72,000.00	— 332.96	71,667.04
Total Other Bonds	\$1,716,801.00	— \$32,958.49	\$1,683,842.51
Other Securities			
General Fund	\$20,080.00		\$20,080.00
Total Investment in Bonds	\$19,988,131.00	\$73,845.40	\$20,011,976.40
General Funds, Unrestricted (Schs. E, pp. 60, 61, and S, pp. 75-80)	\$19,702,061.00	\$23,596.61	\$19,730,647.61
Lane Funds, Restricted (Schs. E, pp. 60, 61, and S, pp. 75-80)	108,000.00	— 2,011.20	105,988.80
Employers' Liability Insurance Fund (Schs. A, pp. 56, 57, and S, pp. 75-80)	53,000.00	— 375.25	52,624.75
Pension Fund (Schs. A, pp. 56, 57, and S, pp. 75, 80)	105,000.00	— 2,364.76	102,635.24
Other Securities, General Fund (Schs. E, pp. 60, 61, and S, pp. 75, 80)	20,080.00		20,080.00
Total	\$19,988,131.00	\$23,845.40	\$20,011,976.40

SCHEDULE R—Concluded
Summary of Investments in Securities for the Year Ended August 31, 1921.

	Detail	Book Value
Bonds, General Funds (Sch. E, pp. 60, 61)-----		\$19,702,051.00
Bonds, Lane Funds (Sch. E, pp. 60, 61)-----		103,000.00
Corporate Stock (Schs. E, pp. 60, 61, and T, p. 81)-----		172,151.00
Other Securities-----		20,080.00
Mortgage Loans Unrestricted-----		1,799,130.31
City (Sch. E, pp. 60, 61)-----	\$1,449,241.12	
Country (Sch. E, pp. 60, 61)-----	237,203.59	
Campus (Sch. E, pp. 60, 61)-----	52,679.60	
Mortgage Loans, Restricted Country (Sch. E, pp. 60, 61)-----		12,950.00
Loans, Campus Buildings (Sch. E, pp. 60, 61)-----		314,876.09
Unsecured Loans (Sch. E, pp. 60, 61)-----		26,658.01
Board of Athletic Control—Basketball Pavilion 6% Interest-----	\$24,535.60	
Tennis Club—Medical School 6% Interest-----	66.56	
Palo Alto Stock Farm 5% Interest-----	1,045.85	
The Palo Alto Hospital—Working Fund Advance 6% Interest-----	1,010.00	
Total Securities (Schs. A, pp. 56, 57, and E, pp. 60, 61)-----		\$22,155,896.32

SCHEDULE S
Bonds—Detailed for the Year Ended August 31, 1921.

BONDS UNRESTRICTED		Maturity	Int. Rate	Par Value	Premium and Discount Unamortized	Book Value
Railway Bonds						
Austin & Northwestern Ry. 1st Mtg. Gold Bonds	7-1-1941	5	\$100,000.00			\$100,000.00
Austin & Northwestern Ry. 1st Mtg. Gold Bonds	7-1-1941	5	100,000.00		\$4,526.30	104,526.30
Atchafalpa, Topeka & Santa Fe 4% 100 Yr. Ad. Bonds	7-1-1935	4	50,000.00		—	50,000.00
Atchafalpa, Topeka & Santa Fe Gen. Mtg. 4% Gold Bonds	10-1-1935	4	850,000.00		20,542.80	870,542.80
Baltimore, Topeka & Santa Fe Gen. Mtg. 4% Gold Bonds	7-1-1948	4	20,000.00		416.26	20,416.26
B. & O. R. R. Pittsburgh, Lake Erie & W. Va. 4% Ref. Mtg. G. Bds.	11-1-1941	3 1/2	964,000.00		—	964,000.00
Chicago, Milwaukee & St. Paul Ry. 3 1/2% Gen. Mtg. Gold Bonds	11-1-1939	3 1/2	100,000.00		8,327.90	108,327.90
Chicago, Rock Island & Pacific 4% Gold Mtg. Bonds	1-1-1938	4	1,600,000.00		110,989.50	1,710,989.50
Chicago & Northwestern 5% Sinking Fund Bonds	10-1-1929	5	93,000.00		3,894.84	96,894.84
Chicago & Northwestern 6% Sinking Fund Bonds	10-1-1923	6	28,000.00		2,018.33	30,018.33
Central Railroad of New Jersey Gen. Mtg. 5% Bonds	7-1-1937	5	305,000.00		66,463.47	371,463.47
Cleveland & Pittsburgh R. R. 3 1/2% Ser. O Gen. Sinking Fd. Gold Bds.	11-1-1943	3 1/2	1,500,000.00		67,765.00	1,567,765.00
Denver & Rio Grande Ry. 4% 1st and Cons. Mtg. Gold Bonds	1-1-1938	4	1,320,000.00		7,084.48	1,327,084.48
Galv., Harrisburg & San A. M. & P. Exten. 5% 1st Mtg. Gold Bonds	5-1-1931	5	2,105,000.00		100,689.69	2,205,689.69
Galv., Harrisburg & San A. M. & P. Exten. 5% 1st Mtg. Gold Bonds	5-1-1931	5	50,000.00		5,500.00	55,500.00
Illinois Central 3 1/2% Purchased Lines Gold Bonds	7-1-1932	3 1/2	100,000.00		—	100,000.00
Illinois Central—Omaha Division 3% 1st Mtg. Gold Bonds	8-1-1931	3	500,000.00		5,732.60	505,732.60
Intern'l Ry. Co. of Cent. Amer. Cent. Div. Purch. Money Gold Bds.	1-1-1927	5	875,000.00		—	875,000.00
Leligh Valley 1st Mtg. Gold Bonds	7-1-1940	4 1/2	313,000.00		22,854.63	335,854.63
N. Y. Central & Hudson R. R. 3 1/2% Mtg. Gold Bonds	7-1-1927	3 1/2	1,350,000.00		106,682.50	1,456,682.50
N. Y. Central & Hudson R. R. 3 1/2% Mich. Cent. Coll. Gold Bds.	2-1-1938	3 1/2	100,000.00		5,077.90	105,077.90
N. Y. Central & Hudson R. R. 3 1/2% Lake Shore Coll. Gold Bds.	2-1-1938	3 1/2	1,000,000.00		—	1,000,000.00
N. Y. Central & Hudson River R. R. 4% Gold Debentures	5-1-1934	4	155,000.00		25,964.00	180,964.00
N. Y. Central R. R. Co. 20 Yr. 6% Conv. Gold Debentures	5-1-1935	6	50,000.00		—	50,000.00
Northern Pacific 4% Prior Lien Ry. & Land Grant Bonds	1-1-1927	4	450,000.00		90.00	450,090.00
Northern Ry. of California 5% 50 Yr. 1st Mtg. Bonds	10-1-1938	5	290,000.00		22,301.24	312,301.24
Oregon Ry. & Navigation Co. 4% Cons. Mtg. Gold Bonds	6-1-1946	4	100,000.00		—	100,000.00
Reading Co. and Phila. & Read. Coal & Iron Co. 4% Jt. Coll. G. B.	1-1-1937	4	20,000.00		781.50	20,781.50
S. Antonio & Aransas Pass Ry. Co. 1st Mtg. Gold Bonds	1-1-1943	4	200,000.00		—	200,000.00
S. P. Branch Ry. 6% 1st Mtg. Gold Bonds	4-1-1937	6	10,000.00		1,972.02	11,972.02
S. P. Ry. Co. of Calif. 5% Cons. Mtg. Gold Bonds	11-1-1937	5	107,000.00		4,138.76	111,138.76
So. Pac. Co. 4% O. P. Stock Coll. Gold Bonds	8-1-1949	4	1,000,000.00		—	1,000,000.00
So. Pac. R. R. Co. 4% 1st Refunding Mtg. Gold Bonds	1-1-1935	4	10,000.00		444.45	10,444.45
Texas & New Orleans R. R. 5% Cons. Mtg. Gold Bonds	7-1-1943	5	50,000.00		3,833.05	53,833.05
Union Pacific Railroad Co. 1st Mtg. 4% R. and Land Grant	7-1-1947	4	490,000.00		20,233.08	510,233.08
Western Pacific 1st Mtg. 5% Bonds	8-1-1946	5	69,200.00		—	69,200.00
Total Railway Bonds Unrestricted						
			\$15,124,200.00		\$271,314.22	\$14,948,014.22

* International Railway Central America on books at \$437,500.00 to be adjusted at time of disposal.

SCHEDULE S—Continued
Bonds—Detailed for the Year Ended August 31, 1921.

BONDS UNRESTRICTED					
Street and Interurban Railway	Maturity	Int. Rate	Par Value	Premium and — Discount Unamortized	Book Value
Brooklyn Rapid Transit Co. Certif. for 3 yr. Notes	1921	7	\$85,000.00		\$85,000.00
Brooklyn Rapid Transit Co. 5% 30 yr. Gold Bonds	10-1-1945	5	20,000.00	\$1,005.90	21,005.90
Incorporated Rapid Transit Co. 5% 1st Ref. Mtg. Bonds	1-1-1936	5	21,000.00		21,000.00
Los Angeles Ry. Co. California 5% 1st Mtg. Bonds	10-1-1935	5	25,000.00	3,062.30	28,062.30
Market St. Railway 5% 1st Consol. Mtg. Gold Bonds	9-1-1924	5	50,000.00	49,725.50	49,725.50
Market St. Railway 5% 5 yr. Coll. Trust Bonds	4-1-1926	6	4,000.00	— 367.60	3,632.40
New York Ry. Co. Cert. of Deposit Issued by Guaranty Trust Co. of New York for 1st Real Estate and Ref. Mtg. 30 yr. 4% Gold Bonds	1-1-1942	4	125,000.00	— 6,459.00	118,541.00
New York Ry. Co. Cert. of Deposit Issued by Bankers Trust Co. of N. Y. for 1st Mtg. 5% Income Gold Bonds	1-1-1942	5	250,000.00	— 77,575.00	172,425.00
Sacramento Electric, Gas & Ry. Co. 5% 1st Mtg. Bonds	11-1-1927	5	2,000.00		2,000.00
Total Street and Interurban			\$515,000.00	— \$50,937.90	\$464,062.10
Other Public Utilities					
Am. Tel. & Tel. Co. 6% 5 yr. Gold Notes	2-1-1924	6	\$50,000.00	\$93.75	\$50,093.75
Calif. Gas & Elec. Corp. 5% Unifying and Refunding Mtg. Bonds	11-1-1937	5	10,000.00	— 215.45	9,784.55
Calif. Gas & Elec. Corp. 5% Unifying and Refunding Mtg. Bonds	11-1-1937	5	35,000.00	— 982.80	34,017.20
Granville Elec. & Gas Co. Cons. Mtg. 5% Bonds	10-1-1933	5	3,000.00		3,000.00
Los Angeles Gas & Electric Corp. 5% 1st Refunding Mtg. Bonds	9-1-1939	5	50,000.00	— 534.35	49,465.65
Los Angeles Gas & Electric Corp. 5% 1st Refunding Mtg. Bonds	9-1-1939	5	25,000.00	— 1,064.20	23,935.80
Los Angeles Gas & Electric Corp. 5% 1st Refunding Mtg. Bonds	9-1-1939	5	25,000.00	— 72.54	24,927.46
Pacific Tel. & Tel. Co. 5% 1st and Coll. Trust Gold Bonds	1-2-1937	5	100,000.00	— 1,794.38	98,205.62
Pacific Gas & Elec. Co. 7% 5 yr. Cal. Trust Conv. Gold Notes	5-1-1925	7	175,000.00		175,000.00
Santa Barbara Gas & Elec. Co. 1st Mtg. 5% Bonds	7-1-1941	5	15,000.00	— 3,355.00	11,645.00
San Joaquin Light & Power Co. 6% 1st and Ref. Mtg.	9-1-1930	6	15,000.00	— 6,451.86	8,548.14
San Joaquin Light & Power Co. 7% Unit and Ref. Mtg. Gold Bds.	8-1-1933	7	100,000.00	— 675.00	99,325.00
South Valley Water Co. 6% Cons. Mtg. Bonds	1-1-1923	6	10,000.00	— 2,960.00	7,040.00
Spring Valley Water Co. 6% Secured Notes	2-1-1923	6	227,000.00	125.40	227,125.40
Spring Valley Water Co. 4% Gen. Mtg. Bonds	12-1-1923	4	100,000.00		100,000.00
Pacific Gas & Elec. Co. 7 1/8 1st Refunding Mtg. Gold Bonds	{ 12-1-1940 12-1-1940 12-1-1941 5-1-1947	{ 7 7 7 5	{ 17,000.00 25,000.00 50,000.00 50,000.00	{ — 1,863.70 — 298.30 — 687.50 — 730.00	{ 16,136.30 24,312.50 49,270.00 270,394.00
Northwestern Bell Tel. 1st Mtg. 20 yr. 7% Gold Bonds			280,000.00	— 9,604.00	270,396.00
So. Calif. Tel. 1st and Ref. Mtg. 5% Sink. Fd. 35 yr. Gold Bonds			50,000.00	— 7,640.00	42,360.00
Total Other Public Utilities			\$1,923,000.00	— \$39,902.13	\$1,883,097.87

SCHEDULE S—Continued
Bonds—Detailed for the Year Ended August 31, 1921.

BONDS UNRESTRICTED					Maturity	Int. Rate	Par Value	Premium and — Discount Unamortized	Book Value
Federal, State and Municipal					7-1-1936	4	\$85,000.00	\$1,714.90	\$81,714.90
City of Boston Highways 4% Bonds					7-1-1936	4	15,000.00		65,234.67
City of Boston Sewerage Loan 4% Bonds					7-31-1921-1932	5	62,000.00	3,234.67	20,000.00
Hester School District, Santa Clara Co., Calif., 5% Bonds					7-1-1926	5	20,000.00		
City and County of San Francisco 5% School Bonds									
United States									
First Liberty Loan—Converted					6-15-1947	4½	900.00	— 115.88	784.12
Second Liberty Loan—Converted					11-15-1942	4½	119,500.00		119,500.00
Third Liberty Loan—Converted					11-15-1942	4½	556,000.00	— 80,342.00	475,658.00
Fourth Liberty Loan					9-15-1928	4½	3,600.00	— 495.94	3,104.06
First Liberty Loan					9-15-1928	4½	4,000.00		4,000.00
Second Liberty Loan					9-15-1928	4½	9,350.00	— 874.22	8,475.78
Third Liberty Loan					10-15-1938	4½	886,500.00		886,500.00
Fourth Liberty Loan					10-15-1938	4½	15,400.00	— 1,954.26	13,445.74
Victory Liberty Loan					5-20-1923	4½	123,000.00		123,000.00
Victory Liberty Loan					5-20-1923	4½	34,300.00	— 655.13	33,644.87
Total Federal, State and Municipal							\$1,384,550.00	— \$79,487.86	\$1,305,062.14
Other									
Alexander Boyd Estate 5% Bonds					6-1-1926-36	5	\$100,000.00		\$100,000.00
Associated Oil Co. 5% 1st Mtg. Bonds					8-1-1922	5	11,000.00		11,000.00
Century Club of Calif. 4% Bonds					1-15-1930	5	7,000.00	— \$212.04	6,787.96
City of Toronto, Prov. of Ontario, 5½% Gen. Cons. Loan Deb. Bds.					7-1-1924	4	300.00		300.00
City of Toronto, Prov. of Ontario, 5½% Gen. Cons. Loan Deb. Bds.					9-1-1925	5½	25,000.00	— 697.50	24,302.50
Crocker Hotel Co. 5½% 1st Mtg. Serial Realty Bonds					9-1-1926	5½	25,000.00	— 847.50	24,152.50
French Cities 6% Gold Bds. Lyons Municipal Exterior Loan of 1919					7-2-1927-28	6	100,000.00		100,000.00
French Cities 6% Gold Bds. Marseilles Munic. Exterior Loan of 1919					11-1-1934	6	35,000.00	— 2,390.50	32,609.50
French Cities 6% Gold Bds. Bordeaux Munic. Exterior Loan of 1919					11-1-1934	6	30,000.00	— 2,049.00	27,951.00
Other—Forward					11-1-1934	6	368,300.00	— 5,587.04	359,712.96

SCHEDULE S—Continued
Bonds—Detailed for the Year Ended August 31, 1921.

BONDS UNRESTRICTED		Maturity	Int. Rate	Par Value	Premium and — Discount Unamortized	Book Value
Other (Continued)						
Carried Forward						
*Fuerste Coal Company		7-1-1944		\$398,300.00	— \$3,587.04	\$394,712.96
General Petroleum Corp. 7% Sinking Fund Gold Notes		2-15-1931	7	25,000.00		1.00
Hobart Estate Co. 6% 1st Mtg. Bonds		1-1-1931	6	17,000.00	— 75.00	5,925.00
Insurance Exchange 5% 1st Mtg. Bonds		1-1-1927	5½	17,000.00		17,000.00
Miller & Lux Inc. 7% 10 yr. 1st Mtg. Gold Bonds		6-15-1930	7	40,000.00		40,000.00
Miller & Lux Inc. 7% 10 yr. 1st Mtg. Gold Bonds		6-15-1930	7	71,000.00	— 240.00	69,760.00
Morris & Co. 1st Mtg. Sinking Fund 4½% Gold Bonds		7-1-1930	4½	55,000.00		55,000.00
Palace Hotel Co. 1st Mtg. 20 yr. Gold Bonds		8-1-1938	6	95,000.00	— 5,928.30	89,071.70
Palace Hotel Co. 1st Mtg. 20 yr. Gold Bonds		8-1-1938	6	301,000.00		295,071.00
Prov. of New Brunswick, Dom. of Canada, 5½% Interim Debentures		19-1-1926	5½	50,000.00	— 1,093.40	48,906.60
Prov. of Ontario, Dom. of Canada, 5% Interim Debentures		11-15-1927	5	50,000.00	— 2,336.00	47,664.00
Prov. of Quebec, Dom. of Canada, 5% Gold Debentures		6-1-1927	5	100,000.00	— 2,530.00	97,470.00
San Francisco Dry Dock Co. 5% 1st Mtg. Bonds		3-1-1931	5	100,000.00	219.10	100,219.10
Standard Oil Co. of Calif. 7% Sinking Fund Gold Bonds		3-1-1931	7	100,000.00		90,000.00
Swedish Gov. 20 yr. 6% Gold Bonds		1-1-1931	6	50,000.00	— 1,790.00	48,210.00
Trinity Bags, Corp. of N. Y. 1st Mtg. 30 yr. 5¼% Sink. Rd. G. In.		6-15-1932	5¼	50,000.00	— 1,060.00	48,940.00
United King. of Gr. Britain and Ireland 10 yr. 5% Conv. Gold Bds.		8-1-1929	5½	100,000.00	— 277.65	99,722.35
Republic of France 7½% Non-Callable 20 yr. Bonds		6-1-1941	7½	102,500.00	— 3,140.00	96,360.00
Total Other Bonds				\$1,614,800.00	— 5,586.50	\$1,557,213.50
					— \$32,389.79	\$1,557,411.21

* Fuerste Coal Co. on Books at \$1.00, difference of \$24,929.00.

SCHEDULE S—Continued
Bonds—Detailed for the Year Ended August 31, 1921.

BONDS UNRESTRICTED	Maturity	Int. Rate	Par Value	Premium and — Discount Unamortized	Book Value
LANE MEDICAL LIBRARY FUNDS					
Railway					
Northern Pacific of California 5% 50 Yr. 1st Mtg. Bonds	10-1-1938	5	\$14,000.00		\$14,000.00
San Francisco & San Joaquin Valley Ry. Co. 5% 1st Mtg. Gold Bds	10-1-1940	5	15,000.00		15,000.00
So. Pacific Branch Ry. 6% 1st Mtg. Gold Bonds	4-1-1938	6	2,000.00		2,000.00
Total Railway Bonds			\$31,000.00		\$31,000.00
Other Public Utility					
Calif. Gas & Elect. Corp. 5% Unifying and Refunding Mtg. Bonds	11-1-1937	5	\$31,000.00	— \$1,476.84	\$29,523.16
Pac. Tel. & Tel. Co. 5% 1st and Coll. Trust Gold Bonds	1-2-1937	5	20,000.00	— 317.66	19,682.34
Total Other Public Utility			\$51,000.00	— \$1,794.50	\$49,205.50
Other					
Sperry Flour Co. 6% 1st Mtg. 15 Yr. Sinking Fund Gold Bonds	2-1-1934	6	\$10,000.00	— \$172.00	\$9,828.00
Standard Oil Co. of N. Y. 7% Serial Gold Debentures	1-2-1939	7	3,000.00	— 7.20	2,992.80
Miller & Lux 7% 10 Yr. 1st Mtg. Gold	6-15-1939	7	10,000.00		10,000.00
General Petroleum Corp. 7% Sinking Fund Gold Notes	2-15-1931	7	3,000.00	— 37.50	2,962.50
Total Other Bonds			\$23,000.00	— \$216.70	\$22,783.30
Total Lane Medical Library Bonds			\$108,000.00	— \$2,011.20	\$105,988.80
EMPLOYERS' LIABILITY INSURANCE FUND					
Other Public Utilities					
Los Angeles Gas & Elect. Corp. 5% 1st Refunding Mtg. Bonds	9-1-1939	5	\$5,000.00	— \$356.21	\$4,643.79
Spring Valley Water Co. 6% Secured Notes	3-1-1923	6	13,000.00		13,000.00
Total Other Public Utilities			\$18,000.00	— \$356.21	\$17,643.79
State, Federal and Municipal					
U. S. Gov. Third Liberty Loan	9-15-1928	4%	\$5,000.00		\$5,000.00

SCHEDULE S—Concluded
Bonds—Detailed for the Year Ended August 31, 1921.

BONDS UNRESTRICTED		Maturity	Int. Rate	Par Value	Premium and — Discount Unamortized	Book Value
EMPLOYERS' LIABILITY INSURANCE FUND—Continued						
Other						
City Investment Co. 5% 1st Mtg. Bonds	3-1-1984	5		\$6,000.00		\$6,000.00
Hobart Estate Co. 6% 1st Mtg. Bonds	Various	6		9,000.00		9,000.00
Miller & Lux Inc. 7% 1st Mtg. Gold Bonds, 10 yr.	6-15-1980	7		6,000.00		6,000.00
Standard Oil Co. of Calif. 7% Serial Gold Debentures	1-1-1981	7		8,000.00	— \$19.04	7,980.96
Total Other Bonds				\$22,000.00	— \$19.04	\$21,980.96
Total Employers' Liability Insurance Bonds				\$53,000.00	— \$375.25	\$52,624.75
PENSION FUND BONDS						
Other Public Utilities						
Los Angeles Gas & Electric Co. Gen. and Refunding 7% Gold Bonds, Series A	3-1-1926	7		\$16,000.00	— \$294.40	\$15,705.60
State, Federal and Municipal						
Fourth Liberty Bonds	10-15-1988	4%		\$17,000.00	— \$1,737.40	\$15,262.60
Other						
Miller & Lux 7% 10 yr. Gold 1st Mtg. Bonds	6-15-1980	7		\$50,000.00	— \$230.00	\$49,770.00
Standard Oil Co. of Calif. 7% Serial Gold Debentures	1-1-1981	7		15,000.00	— 35.70	14,964.30
Standard Oil Co. of N. Y. 7% Serial Gold Debentures	1-2-1981	7		2,000.00	— 4.76	1,995.24
General Petroleum Corp. 7% Sinking Fund Gold Notes	2-15-1981	7		5,000.00	— 62.50	4,937.50
Total Other Bonds				\$72,000.00	— \$332.96	\$71,667.04
Total Pension Fund Bonds				\$105,000.00	— \$2,364.76	\$102,635.24
OTHER SECURITIES						
Treasury Certificates	12-15-1921	6		\$20,000.00		\$20,000.00
Western Pacific Railway Script Cert.	1921	5		80.00		80.00
Total Other Securities				\$20,080.00		\$20,080.00

SCHEDULE T
Corporate Stocks for Year Ended August 31, 1921.

	Book Value	Dividends from Earn- ings Received During Year 1920-21	Liquidation Dividends Received
Chicago, Rock Island & Pacific Railway Co..			
400 Shares 7% Preferred.....	\$40,000.00	\$2,800.00	
1000 Shares Common	20,000.00		
American Cotton Company			
250 Shares Preferred.....			
125 Shares Common.....	1.00		
Chevy Chase Land Company			
187 Shares	100.00		
Ione Coal & Iron Company			
8000 Shares	100.00	2,000.00	\$10,000.00
Oakland Water Front Company			
7274 Shares	100.00		21,822.00
Pacific Improvement Company			
2500 Shares	100.00	2,482.44	275,000.00
Standard Oil Company of New Jersey			
1000 Shares 7% Cumulative.....	111,750.00	6,916.87	
	\$172,151.00	\$14,199.31	*\$306,822.00
Schedules	E	F	N
	(pp. 60, 61)	(pp. 99, 100)	(pp. 64, 65)

* Closed to Capital Increase Since Endowment.

REPORT OF THE COMPTROLLER

To the Honorable Board of Trustees of Stanford University and to the President of the University:

The Comptroller herewith submits the following report covering the University's financial operations for the period beginning September 1, 1920, and ending August 31, 1921:

BUSINESS ADMINISTRATION AND ACCOUNTING

The new system of business administration and accounting inaugurated on September 1, 1919, under the supervision of Klink-Bean & Company, certified accountants, now has been in operation for a sufficient period to permit the University to judge its efficiency. With certain minor changes made during the past year, the system has proven both efficient and economical. The plan of financial operation is set forth fully in the Comptroller's report for the year ending August 31, 1920. The following minor changes have been carried out during the past year:

In order that the monthly statements may give the latest possible data on costs of operation, work orders now are closed out monthly instead of at the time of the completion of the jobs. This change makes it possible to keep a more accurate check upon budget items than heretofore. Considerable time and study has been devoted to a better coordination of the budgets and the monthly and annual statements. With certain minor changes which will be put into effect this coming year, the President's, Treasurer's and Comptroller's budgets will be well tied in with the estimates of annual income, and will be more readily and accurately controlled.

In view of the fact that the Stanford Hospital is carried as an investment asset, it is important that a correct pro rata distribution of costs of operating the Stanford and Lane Hospitals should be established. For this purpose a three-months' survey, including a count and record of all food served, supplies furnished, and services rendered to each hospital was made and the pro rata costs distributed in accordance with the findings of such survey.

SERVICE DEPARTMENTS

GROUNDS

The changes in the Corporation Yard have been completed and the centralization of all the shops, stables and garages, and the storage of all building materials in the small rectangle at the rear of the Mechanical Engineering shops, have proven a very satisfactory arrangement. Under this new arrangement the area devoted to such purposes has been reduced from approximately eight acres to approximately three acres. The released acreage has been made available for new athletic fields for women.

A portion of the blacksmith shop has been converted into an automobile repair shop and a skilled automobile mechanic, who is also a competent blacksmith, has been placed in charge.

A photostatic department also has been installed for the accommodation of the departments of the University, and the University Engineer.

With these additions, the University service departments and the mechanician shop, operated by the Department of Mechanical Engineering, are prepared to handle, on short notice, all kinds of repair work, ranging from delicate departmental equipment to heavy road machinery. The following services are rendered through the University service departments: store keeping, deliveries, carpentry, cabinet making, painting, glazing, plastering, plumbing, sheet metal work, steam-fitting, road construction, grading, excavating, stone masonry, brick laying, cement work, tile setting, surveying and engineering, printing, book-binding, photostatic reproducing, and electrical installations and repairs.

The personnel of these departments has been selected and trained with a view to eliminating lost time and overhead, and many of the mechanics are skilled in several trades. To illustrate, our chief electrician has been trained, during the past year, in drafting and surveying, and his assistants operate the photostat and the stereopticon and moving picture machines; the stone mason is a competent brick worker, plasterer and tile setter.

A careful check on the cost of the services rendered by these departments, as compared with prices charged by outside contractors, has demonstrated that the University not only saves time, but considerable expense by maintaining fully equipped service departments. These various departments not only handle all of the University repair work and considerable original construction, but also most of the work for residents on the campus.

Very little permanent planting has been done during the past year, but considerable preliminary work has been accomplished. Landscape plans have been perfected for beautifying the inner quadrangle courts; the area at the base of the balustrades in front of the main group of buildings; and the grounds adjoining the basketball pavilion and the Art Gallery.

A new ten-acre nursery tract, situate on Governor's Avenue near Lake Lagunita, has been laid out and several thousand specimens of ornamental shrubs are now growing in this nursery and soon will be ready for transplanting to various parts of the Campus. A considerable saving in cost will be effected by growing this stock in the University nursery.

In the year 1892 many small live oaks were planted in the area immediately in front of the Museum. In 30 years these oaks have grown to be fine large trees, measuring 15 feet in height, with a spread of 20 feet, and a trunk diameter of six inches. Four of these specimens have been successfully boxed and transplanted to other locations on the campus. In view of the success of this experiment some 30 of these oaks soon will be transplanted to various other locations where they will add greatly to the beauty of the grounds.

During the year a new road has been constructed from Encina Hall past the gymnasium and Stadium, connecting with Embarcadero Road at the highway. This road not only serves the Stadium, but furnishes a much needed outlet from the campus to the high school, South Palo Alto and San Jose. It was constructed almost entirely from gravel taken from the bottom of the Stadium pit during the course of its excavation.

Lomita Drive, running along the west side of the Quadrangle, has been extended straight past Roble Hall, connecting with Lagunita Drive.

A new subdivision, officially known as San Juan Subdivision No. 3, has been laid out, and considerable work begun on improvements in the subdivision. It lies on the southerly slope of San Juan Hill, and makes available seventeen choice additional lots for faculty residences. In order that these lots may be reserved for faculty use, the former practice which permitted persons not officially connected with the University to lease lots on the campus for residential purposes, has been discontinued. It is possible that when the existing subdivisions are fully settled, and additional subdivisions opened up, the former practice should be reestablished.

WATER SUPPLY

The addition to the Searsville dam has resulted in an abundant supply of storage water for irrigation, but unfortunately, before this water can be used to good advantage, it will be necessary to improve the distributing system. At present, the use of water, during the summer months, on the lower levels, reduces the pressure on the higher levels to such an extent that there is a serious shortage of water for irrigation on San Juan Hill. It is planned to improve this condition by the installation of a booster pump.

The new well, drilled near the county road, for the purpose of increasing the domestic water supply, has proven a disappointment owing to the rapidly lowering water level in the gravel beds underlying the Santa Clara Valley. During the past year Tibbetts & Kieffer, civil engineers, acting under the direction of the Santa Clara Valley Water Conservation Committee, made a very careful survey of water conditions in the Santa Clara Valley, and the following facts presented in their report are of interest to the University:

In 1917 a permanent decline of the water plane began, owing to the fact that the demand for water then began to exceed the natural supply. Since that date there has been an average annual permanent drop of four to five feet. The maximum demand for water will be reached at the end of the next decade, and the permanent drop in the water plane then, no doubt, will increase to approximately six feet per annum.

By means of the construction of 17 reservoirs, sites for two of which are located on the Stanford property, it will be possible to conserve enough of the run-off to meet the ultimate maximum demands of the Santa Clara Valley. At the present time about 63 per cent of the run-off is wasted.

The requirements for urban communities are found to be almost identical with those for orchard tracts, the former being about 1.31 acre feet per year, and the latter about 1.25 acre feet per year. The continued lowering of the water plane has increased the cost of pumping the University domestic water supply, and is a matter of considerable concern.

UNIVERSITY PRESS

The University Press has enjoyed a most successful year and shows a net profit of over \$7000 on outside work. This profit has been invested in additional equipment. All University and student publications, including the "Quad," have been handled by the Press at a low cost compared with outside prices.

PALO ALTO FARM

The Palo Alto Farm consists of approximately 8,400 acres. Of this amount 4,464 acres are under lease to the Palo Alto Stock Farm for a period of fifteen years, ending September 30, 1933; ten hundred and thirty-four acres have been set aside as the Campus site. A careful study has been made of the possibility of increasing the income from that portion of the farm not under lease to the Stock Farm. Where renewals have been made rentals have been increased, resulting in a total annual increase of approximately \$8,000, or about twenty-five per cent. It is not likely that this amount can be increased unless water for irrigation becomes available.

By constructing another dam, at a cost of approximately \$250,000, at a site on San Francisquito Creek about two miles below the Searsville dam, enough surface water could be stored to irrigate approximately 2,500 acres, and the University has at least this acreage in arable land. It would be good business to construct this dam, and it is hoped that some arrangement soon can be made for its construction. The construction of this dam would have the additional advantage of making it possible to maintain water in Lake Lagunita throughout the year, thereby replenishing our domestic water supply, for it has been demonstrated that the wells from which we pump our domestic water supply are materially affected by the seepage from Lake Lagunita through the gravel beds. In the meantime, attention has been directed toward the raising of crops which do not require irrigation. Some 600 acres of land near Mayfield have been rented for the raising of canning peas. The experiment proved a failure last year owing to a visitation of the pea aphid. The same pest last year visited other areas in the State where peas have been grown successfully for a number of years, and the tenant has had sufficient faith in the possibility of raising peas to continue the experiment again next year. The University is receiving an annual rental of \$15.00 per acre for the land devoted to this use. This constitutes a high rental for land upon which water is not available.

During the year the University has rented to the Town of Mayfield, a five-acre tract on the highway, for use as a playground and baseball park.

ROCK CRUSHER

The rock crusher and quarry have been leased to A. Hess & Company of Redwood City for a period of three years, under a lease providing for the operation of the quarry on a royalty basis. The royalties will amount to approximately \$3500 a year, and the agreement provides that the University and campus residents shall be entitled to all their requirements at a fixed price which is less than the cost of production under the University's former plan of operating the crusher.

NEW CONSTRUCTION

The shortage of faculty housing accommodations has been relieved somewhat by the completion of three small cottages on Alvarado Row. In addition to these, construction work has begun on four faculty residences in the new San Juan Subdivision.

Construction of the new Nurses' Home in San Francisco was begun in March and the building is now almost completed.

Construction work on the Basketball Pavilion and the Stanford Union has been delayed to a considerable extent on account of a general building strike which began in May and still is in effect. Notwithstanding these unavoidable delays, considerable savings have been effected by the superintendent of construction. A saving on the Nurses' Home of approximately \$10,000 probably will be made, and inasmuch as the work is being done on a cost plus basis, with a guaranteed maximum cost, this saving will inure to the University.

Other construction includes the building of six oil-macadam tennis courts for Roble Gymnasium, and two splendid hockey fields, one dirt and the other turf. By using removable pipe standards counter sunk in concrete bases below the surface of the courts and below the surface of the hockey fields, it is possible to superimpose 20 basketball courts on these fields during the basketball season.

Financial statements covering the year's operations are hereunto annexed.

A. E. ROTH,
Comptroller.

INDEX TO TREASURER'S AND COMPTROLLER'S FINANCIAL TABLES

	Schedule	Page
Assets—Current—Analysis of	C	95, 96
Assets—Investment—Analysis of	E	60, 61
Balance Sheet—Consolidated	A	56, 57; 88, 89
Balance Sheet—Divisional	A1	58, 59; 90, 91
Balance Sheet—Current	A2	92, 93
Bonds and Securities—Acquisitions and Disposals.....	Q	67-71
Bonds—Detail—Schedule of	S	75-80
Capital Increase Since Endowment—Analysis.....	N	64, 65
Corporate Stock—Schedule of.....	T	81
Capital Expenditures from Income (not dep'tmental)	I	108
Dividends	T	81
Expenditures—Analysis of	H	102-107
Educational Plant Assets—Detail of.....	L	114-120
Endowments—Schedule of.....	M	62, 63
Gifts—Received and/or Expended.....	P	121-125
Hospitals—Income and Expenditures.....	G	101
Income—Analysis of	F	99, 100
Income—Summary of Expend. and Surplus—Current	B	94
Income from Special Funds—Schedule of.....	P	121-125
Investments—Securities—Summary of	R	72-74
Investment—Lands, Buildings, Equipment.....	O	66
Income Section Educational Plant—Operations.....	J	109
Liabilities—Current Analysis of.....	D	97, 98
Lands, Buildings and Equipment—Investment.....	O	66
Loans, Unsecured	R	74
Medical Division, S. F.—Income and Expenditures....	G	101
Operations of Miscellaneous Income Units.....	J1	110, 111
Press—Departmental Operations	J1	111
Plant Investment	L	114-120
Real Estate and Improvements	O	66
Surplus	B-K	94; 112, 113
Stocks	T	81
Securities	S	75-80
Scholarships	P	121-125
Student Loans—Schedule of.....	X	126

SCHEDULE A
Consolidated Balance Sheet as at August 31, 1921.

DESCRIPTION	Detail	Total
ASSETS		
Cash Assets		
Current Funds -----	\$46,031.41	
Investment Funds -----	222,486.04	\$268,517.45
Accounts Receivable Assets		
Accounts Receivable -----	\$53,219.22	
Rents Receivable -----	— 193.99	
Interest Accrued -----	294,407.43	347,432.66
Bonds—Pension Fd. (Schs. A-2, pp. 92, 93, and S, pp. 75-80)		52,624.75
Bonds—Employers' Liability Insurance Fund (Schs. A-1, pp. 90, 91, and S, pp. 75-80)-----		102,635.24
Securities (Schs. E, pp. 60, 61, and R, pp. 72-74)-----		22,155,896.32
Contracts of Sale-----		923,625.08
Contracts of Sale—Faculty Housing Fund-----		143,179.52
Lands, Buildings and Equipment		
Investment (Schs. E, pp. 60, 61, and Q, pp. 67-71)-----	\$1,177,180.62	
Educ. Plant (Schs. A-1, pp. 90, 91, and L, pp. 114-120)---	8,806,275.68	
Income Section Educational Plant-----	1,243,540.11	11,226,996.41
Other Assets		
Liberty Bonds—Employees -----	\$211.72	
Bonds as Deposits -----	1,300.00	
Investment (Sch. E, pp. 60, 61)-----	33,377.91	34,889.63
Working Assets (Sch. A-2, pp. 92, 93)-----		164,319.83
Deferred Charges to Operations (Sch. A-2, pp. 92, 93)-----		7,888.29
Total -----		\$35,427,506.48

SCHEDULE A
Consolidated Balance Sheet as at August 31, 1921.

DESCRIPTION	Detail	Total
LIABILITIES		
Immediate Demands for Cash (Sch. D, pp. 97, 98)-----		\$71,757.03
Other Liabilities		
Unappropriated Income (Sch. P, pp. 121-125)-----	\$47,042.54	
Loan and Relief Funds (Sch. X, p. 126)-----	5,022.64	
Hospital and Special Funds (Sch. P, pp. 121-125)-----	570.60	
Unclaimed Deposits -----	8,149.66	
Deferred and Contingent-----	11,807.82	67,598.26
Total Liabilities -----		\$139,350.29
RESERVES (Sch. A-2, pp. 92, 93)		
Reserve for Deferred Charges to Operations-----	\$7,388.29	
Other Reserves -----	204,208.50	\$211,596.79
ENDOWMENTS		
Unrestricted Endowments (Sch. M, pp. 62, 63)-----	\$21,297,207.91	
Restricted Endowments (Sch. M, pp. 62, 63)-----	1,270,136.64	
Capital Increase Since Endowment (Sch. N, pp. 64, 65)---	3,744,149.62	
Endowments Expended on Educational Plant-----	4,242,606.48	
Endowments Borrowed Expended on Educational Plant	167,144.08	30,721,244.73
SURPLUS		
Current Deficit (Schs. A-1, pp. 90, 91, B, p. 94, and K, pp. 112, 113) -----	\$41,211.45	
Surplus Income Expended on Educational Plant-----	4,396,525.12	4,355,313.67
Total -----		\$35,427,506.48

SCHEDULE A-1

Divisional Balance Sheet as at August 31, 1921.

CURRENT ASSETS (Sch. C, pp. 95, 96)	Total
Cash on Hand and in Bank.....	\$46,031.41
Accounts Receivable	347,432.00
Other Assets	156,771.71
Working Assets	164,319.83
Deferred Charges to Operation.....	7,388.29
Total	\$721,943.90
INVESTMENT ASSETS (Sch. E, pp. 60, 61)	
	Total
Securities (Sch. R, pp. 72-74).....	\$22,155,896.32
Lands, Buildings and Equipment (Sch. Q, pp. 67-71).....	1,177,180.62
Contracts of Sale, Faculty Housing Fund.....	143,179.82
Contracts of Sale	923,625.08
Due from Current Funds.....	412,208.27
Cash in Banks	222,486.04
Other Assets	33,377.91
Income Section—Educational Plant	1,243,540.11
Total	\$26,311,494.17
EDUCATIONAL PLANT ASSETS	
	Total
Land	\$18,633.66
Buildings and Structures	7,065,989.39
Equipment	1,840,847.43
Improvements	555,854.15
Unsegregated	1,426,705.49
Total	\$10,938,030.17
Less: Educational Plant Assets Transferred to Investment Section.....	2,131,754.49
(Sch. L, pp. 114-120) Total	\$8,806,275.68

SCHEDULE A-1
Divisional Balance Sheet as at August 31, 1921.

CURRENT LIABILITIES (Sch. D, pp. 97, 98)	Total
Immediate Demands for Cash.....	\$71,757.03
Due to Investment Funds.....	412,208.27
Other Liabilities.....	67,598.26
Reserves (Sch. A-2, pp. 92, 93).....	211,596.79
Current Surplus	
Cash in Excess of Immediate Demands for Cash.....	— \$25,725.62
Accounts Receivable in Excess of	
Due to Investment Funds and Other Liabilities.....	188,722.67
	\$162,997.05
Less: Reserve Other than that for Deferred Charges.....	204,208.50
Net Deficit	41,211.45
Total	\$721,948.90
INVESTMENT ENDOWMENTS	Total
Unrestricted Endowment (Sch. M, pp. 62, 63).....	\$21,297,207.91
Restricted Endowments (Sch. M, pp. 62, 63).....	1,270,136.64
Capital Increase Since Endowment (Sch. N, pp. 64, 65).....	3,744,149.62
Total	\$26,311,494.17
EDUCATIONAL PLANT ENDOWMENTS AND SURPLUS INCOME EXPENDED	Total
Endowments Expended on Educational Plant (Sch. M, pp. 62, 63).....	\$4,242,606.48
Surplus Income Expended on Educational Plant.....	4,396,525.12
Endowment Funds Borrowed Expended on Educational Plant.....	167,144.08
Total	\$8,806,275.68

SCHEDULE A-2
Current Balance Sheet as at August 31, 1921.

DESCRIPTION	Detail	Total
ASSETS (Sch. C, pp. 95, 96)		
Cash on Hand and in Bank		
Revolving Funds -----	\$21,160.00	
Cash in Bank—Commercial -----	24,871.41	\$46,031.41
Accounts Receivable		
Accounts Receivable -----	\$53,219.22	
Rents Receivable -----	— 193.99	
Interest Accrued -----	294,407.43	347,432.66
Other Assets		
Liberty Bonds—Employees -----	\$211.72	
Bonds—Employers' Lia. Ins. Fund (Sch. S, pp. 75-80) -----	53,000.00	
Bond Premium and Discount Employers' Liability Insurance Fund -----	— 375.25	
Bonds Received as Deposits -----	1,300.00	
Bonds—Pension Fund (Sch. S, pp. 75-80) -----	105,000.00	
Bond Premium and Discount Pension Fund -----	— 2,364.76	156,771.71
Working Assets		
General Stores -----	\$124,710.39	
Merchandise -----	10,720.19	
Prepaid Expenses -----	28,889.25	164,319.83
Deferred Charges to Operation		
Work in Process -----	\$7,366.62	
Suspense -----	21.67	7,388.29
Total Assets -----		\$721,943.90

SCHEDULE A-2
Current Balance Sheet as at August 31, 1921.

DESCRIPTION	Detail	Total
LIABILITIES (Sch. D, pp. 97, 98)		
Immediate Demands for Cash		
Pay Rolls Payable.....	\$23,222.20	
Accounts Payable	46,210.15	
Depositors	8,445.21	
Student Bodies	— 6,120.53	\$71,757.08
Due to Investment Funds.....		412,208.27
Other Liabilities		
Unappropriated Income	\$47,042.54	
Loan and Relief Funds (Sch. X, p. 126)	5,022.64	
Hospital and Special Funds (Sch. P, pp. 121-125).....	570.60	
Unclaimed Deposits	3,149.66	
Deferred and Contingent	11,807.82	67,598.26
Reserves		
Reserve for Depreciation of Equipment.....	\$17,985.09	
Reserve for Uncollectible Accounts.....	244.00	
Reserve for Employers' Liability Insurance.....	54,365.21	
Reserve for Sinking Fund—University Club Building.....	22,570.57	
Reserve for Deferred Charges to Operations.....	7,388.29	
Reserve for New Press Equipment.....	6,138.36	
Reserve for Pension Fund.....	102,625.83	
1920 Senior Class Endowment Sinking Fund.....	279.44	211,596.79
Current Surplus		
Cash in Excess of Immediate Demands for Cash.....	— \$25,725.62	
Accounts Receivable and Other Assets in Excess of Due to Investment Funds and Other Liabilities.....	188,722.67	
	\$162,997.05	
Less: Reserve Other than that for Deferred Charges.....	\$204,208.50	
Net Deficit		41,211.45
Total Liabilities		\$721,948.90

SCHEDULE B

Statement of Current Income, Expenditures, and Surplus for Year Ending Aug. 31, 1921

DESCRIPTION	
GROSS INCOME (Sch. F, pp. 99, 100)	
Income from Securities.....	\$1,037,504.57
Income from Real Estate.....	52,811.78
Income Section Educational Plant.....	503,061.54
Income from Other Investment Assets.....	13,656.96
Income from Special and Endowments Funds (Sch. P, pp. 121-125).....	91,271.96
Income from Academic Sources.....	453,341.62
Sales.....	149,162.51
Income from Other Sources.....	190,547.95
Total Income.....	\$2,496,358.89
Less: Income Appro. to Special and Endow. Funds (Sch. P, pp. 121-125).....	57,908.80
Total Gross Income.....	\$2,438,450.09
EXPENDITURES (Sch. H, pp. 102-107)	
Expenses	
Administrative and General.....	\$356,776.09
Instruction and Research.....	950,466.01
Independent Departments and Divisions.....	301,458.10
Operation and Maintenance of Educational Plant.....	193,435.40
Service Departments.....	111,144.97
Investment Enterprises.....	31,661.98
Income Section Educational Plant.....	443,136.07
Total Expenses.....	\$2,393,078.62
Capital	
Educational Plant Additions	
Buildings and Structures.....	\$3,875.47
Improvements.....	9,933.17
Equipment.....	82,395.49
Unsegregated.....	3,007.20
Total Capital.....	\$104,211.33
Total Expenditures.....	2,497,289.95
Total Net Deficit for Period.....	\$53,839.86
CURRENT SURPLUS	
Surplus Adjustment (Sch. K, pp. 112, 113).....	\$7,481.16
Net Deficit as Above.....	53,839.86
Surplus as Affected by Deferred Accounts (Sch. K, pp. 112, 113).....	10,147.23
Deficit August 31, 1921 (Sch. K, pp. 112, 113).....	\$41,211.45
SURPLUS EXPENDED ON EDUCATIONAL PLANT	
Surplus Income Expended—First of Period.....	\$4,088,222.84
Adjustment—Plant Transfer.....	108,863.73
Appropriated from Surplus to Repay Loan.....	\$100,000.00
Less Interest.....	4,772.78
	95,227.22
Educational Plant Additions as Above.....	104,211.33
Total.....	\$4,396,525.12

SCHEDULE C
Analysis of Current Assets as at August 31, 1921.

DESCRIPTION	Detail	Total
CASH ON HAND AND IN BANKS		
Revolving Funds		
Treasurer's Office	\$250.00	
Comptroller's Office	5,500.00	
University Library	20.00	
Encina Hall	50.00	
Medical Library	40.00	
Sequoia Hall	50.00	
Lane and Stanford Hospitals	15,000.00	
University Storeroom	25.00	
Hopkins Marine Station	200.00	
Printing and Binding Department	20.00	
Roble Gymnasium	5.00	\$21,160.00
Cash in Bank—Commercial		
National Bank of Commerce—New York	\$5,141.91	
Union Trust Company—Regular Account	— 1,442.28	
Bank of Palo Alto	6,587.54	
Bank of California—Regular Account	— 334.20	
Wells Fargo Nevada National Bank—Regular Account	11,384.21	
First National Bank—Palo Alto	3,534.23	24,871.41
Total Cash on Hand and in Banks		\$46,031.41
ACCOUNTS RECEIVABLE		
Accounts Receivable		
Comptroller	\$23,898.05	
Lane and Stanford Hospitals	25,998.27	
Vina Ranch	3,322.90	\$53,219.22
Rents Receivable—Comptroller		— 193.99
Interest Accrued—Comptroller		294,407.43
Total Accounts Receivable		\$347,432.66
OTHER ASSETS		
Liberty Bonds—Employees		\$211.72
Bonds—Employers' Liability Ins. Fund (Sch. S, pp. 75-80)		52,624.75
Bonds Received as Deposits		1,300.00
Bonds—Pension Fund (Sch. S, pp. 75-80)		105,000.00
Bond Premium and Discount—Pension Fund		— 2,364.76
Total Other Assets		\$156,771.71
Amount Forwarded		\$550,235.78

SCHEDULE C—Concluded
Analysis of Current Assets as at August 31, 1921.

DESCRIPTION	Detail	Total
Amount Brought Forward.....		\$550,235.78
WORKING ASSETS		
General Stores		
Comptroller—General	\$43,061.68	
Comptroller—Printing and Binding.....	10,235.97	
Lane and Stanford Hospitals.....	27,066.31	
Arboretum Wood	1,500.00	
Rock Crusher and Service Departments.....	1,206.28	
Supplies in Academic Departments.....	34,697.08	
Hay and Grain.....	6,944.07	\$124,710.39
Merchandise		
Comptroller (Unfinished Cash Sale Jobs—Press).....	\$1,383.81	
Medical School Dispensary Stores.....	9,336.38	10,720.19
Prepaid Expenses		
Unexpired Insurance	\$26,028.06	
Medical Department Microscope Loan.....	1,147.23	
X-Ray Loan	1,715.96	28,889.25
Total Working Assets.....		\$164,319.83
DEFERRED CHARGES TO OPERATIONS		
Work in Process—Printing and Binding Departments.....		\$7,366.62
Suspense		21.67
Total Deferred Charges to Operations.....		\$7,388.29
Total Current Assets.....		\$721,943.90

SCHEDULE D
Analysis of Current Liabilities as at August 31, 1921.

DESCRIPTION	Detail	Total
IMMEDIATE DEMANDS FOR CASH		
Pay Rolls Payable—Comptroller.....		\$23,222.20
Accounts Payable		
Comptroller	\$43,967.55	
Lane and Stanford Hospitals.....	2,242.60	46,210.15
Depositors		
Comptroller	\$398.00	
University Library	231.25	
Encina Hall	3,754.00	
Madrono Hall	5.00	
Sequoia Hall	758.00	
Lane and Stanford Hospitals.....	358.25	
Engineering Group of Academic Departments.....	45.00	
Encina Gymnasium	526.93	
Roble Hall	2,108.28	
School of Medicine.....	260.50	8,445.21
Student Bodies		
Associated Students	\$148.27	
Students' Guild	322.14	
Stanford Women's Club.....	48.08	
Stanford Union	144.98	
Board of Athletic Control.....	— 7,270.33	
Encina Club	230.14	
Roble Club	277.50	
Sequoia Club	— 68.31	
Alvarado Club	47.00	— 6,120.53
Total Immediate Demands for Cash.....		\$71,757.03
Due to Investment Funds.....		\$412,208.27
OTHER LIABILITIES		
Unappropriated Income from Scholarship Funds		
W. J. Dickey Scholarship.....	— \$139.32	
C. F. Elwell Scholarship.....	500.00	
Wilmer J. Gross Scholarship.....	150.00	
Dr. Emmet Rixford Scholarship.....	500.00	
Geo. F. Crothers Law Scholarship.....	250.00	
Dorothy Metz Scholarship.....	200.00	
Hiram C. Fisk Scholarship.....	60.00	\$1,520.68
Unappropriated Income—Special Contrib. for Current Purposes.		
C. Annette Buckel Foundation.....	\$3.89	
Research Fund in Oriental Diseases.....	499.45	
Insulator Test Fund 1916.....	528.91	
L. M. Terman Fellowship.....	300.00	
United States Social Hygiene Board Fund.....	1,692.46	
T. J. Hoover Fellowship in Mining.....	400.05	
Neilson Neurological Free Beds.....	— 18.45	
Neilson Pediatric Free Beds.....	120.20	
Furnishing Nurses' Home.....	12.50	
Amount Forwarded	\$3,539.01	\$1,520.68

SCHEDULE D—Concluded
Analysis of Current Liabilities as at August 31, 1921.

DESCRIPTION	Detail	Total
Amount Brought Forward.....	\$3,539.01	\$1,520.68
Dr. T. M. Williams—Gift for Installing Skylight in Aero- dynamic Laboratory	4.14	
Anonymous Gift to Appointment Secretary.....	1,000.00	
American Medical Association Research Grant.....	300.00	
California Packing Co.—Study in Botulism.....	— 815.66	
Research Fund in Oil Industry.....	4,539.47	
Research Fund in Wood Distillation.....	35.45	
N. E. L. A. Insulator Test Fund.....	736.55	
Dr. Cooper Research Fund.....	785.50	
L. H. Hoover Binding Fund—Branner Geological Collection. The Commonwealth Fund for Investigation of Gifted Chil- dren of California.....	176.15	
	1,390.86	
Dr. A. Barkan—Books on History of Medicine.....	184.42	
The Food Research Institute of Leland Stanford Junior Uni- versity	18,974.78	
U. S. Interdepartmental Social Hygiene Board Fund for In- vestigating Moral Development, with Special Reference to the Problems of Social Hygiene.....	— 582.41	
U. S. Interdepartmental Social Hygiene Board Fund for In- vestigation and Demonstration of Educational Means and Measures in Social Hygiene.....	— 1,336.57	
Dr. A. Barkan—Medical Library Books.....	960.91	
Henry Gibbons, Jr.—Library of Obstetrics and Gynecology..	188.07	
Jewel Fund—Books	3,793.90	
Lane Medical Lecture Fund.....	1,736.76	
Lane Medical Library Sundry Endowments.....	14.34	
O. G. Lathrop—Books on California.....	160.01	
J. H. Meyer—In Memory of A. Borel.....	547.01	
T. W. Stanford—Psychic Investigation.....	1,471.96	
T. W. Stanford—Psychic Literature.....	351.55	
R. F. West—Lectures on Immortality, etc.....	1,367.52	
Library Fund Hopkins Marine Station.....	3.23	
T. W. Stanford Endowment for Psychology and Psychic Investigation	5,813.16	
Chair in Japanese History and Civilization Endowment.....	201.75	45,521.86
Total Unappropriated Income.....		\$47,042.54
Loan and Relief Funds (Sch. X, p. 126)		
Alumni Graduate Student Loan Fund.....	\$140.00	
William Burton Barber Loan Fund.....	2,326.60	
Horace Davis Student Loan Fund.....	1,007.52	
Harker School Loan Fund.....	225.00	
Medical Faculty Relief Fund.....	206.38	
Women's Student Loan Fund.....	39.18	
Associated Students' Loan Fund.....	175.00	
Stanford Alumni Association Undergraduate Loan Fund.....	420.00	
Dean of Men Loan Fund.....	382.96	
Class of 1906 Loan Fund.....	100.00	5,022.64
Hospital Special Funds.....		\$570.60
Unclaimed Deposits—Lane and Stanford Hospitals.....		3,149.66
Deferred and Contingent Liabilities.....		11,807.82
Total Other Liabilities.....		\$67,593.26

SCHEDULE F
Analysis of Gross Income Year Ending Aug. 31, 1921.

DESCRIPTION	Detail	Total
Income from Securities		
Bonds		
Unrestricted -----	\$867,579.04	
Restricted -----	5,610.08	
		\$873,189.12
Dividends on Corporate Stock (Sch. T, p. 81) -----		14,199.31
Interest on Mortgage Loans		
Unrestricted -----	\$87,842.28	
Restricted -----	958.09	
		88,800.37
Interest Contracts of Sale -----		52,241.25
Interest Building Fund Loan -----		4,772.78
Interest Unsecured Loans -----		639.69
Income from Other Securities -----		3,662.06
Total Interest Income -----		\$1,037,504.57
Income from Real Estate—City		
Unrestricted		
San Francisco -----	\$14,131.54	
Alameda -----	150.00	
Seattle -----	— 890.00	
Oakland (Buckel House) -----	420.00	
		13,811.54
Restricted—San Francisco -----		863.25
Total Income from Real Estate—City -----		\$14,674.79
Income from Country—Unrestricted		
San Mateo and Santa Clara Counties -----	\$37,654.48	
Marin County -----	482.51	
Total Income from Real Estate—Country -----		38,136.99
Total Income from Real Estate -----		\$52,811.78
Income Section Educ. Plant (Net Income Sch. J, p. 109)		
Encina Hall -----	\$39,755.95	
Roble Hall -----	26,612.13	
Sequoia Hall -----	8,037.12	
Alvarado Hall -----	756.75	
Residences -----	26,145.85	
Real Estate—Campus -----	11,768.82	
Stanford University Hospital (Net Income Sch. G, p. 101) -----	380,046.09	
Electric Railways -----	2,328.00	
Water Supply System -----	6,813.88	
Gas Pipe Line Rentals -----	796.95	
		503,061.54
Income from Other Investment Assets		
Interest on Daily Bank Balances -----		13,656.96
Amount Forwarded -----		\$1,607,034.85

SCHEDULE F—Concluded
Analysis of Gross Income Year Ending Aug. 31, 1921.

DESCRIPTION	Detail	Total
Amount Brought Forward.....		\$1,807,034.85
Income from Special and Endowment Funds		
Income from Scholarships.....	\$4,700.90	
Income from Special Contributions for Current Purposes.....	40,077.48	
Income from Special Endow. Funds (Sch. P, pp. 121-125)	46,493.58	
	\$91,271.96	
Less: Income Appropriated to Special and Endowment Funds (Sch. P, pp. 121-125).....	57,908.80	
		33,363.16
Income from Academic Sources		
Tuition Fees—General	\$248,748.94	
Tuition Fees—Tuition Notes Paid Year Following Issue.....	1,650.00	
Tuition Fees—Law	20,615.00	
Tuition Fees—Medical	9,195.79	
Incidental Fees	79,576.74	
Laboratory Fees—University	71,684.00	
Roble Gymnasium Fees.....	10,844.59	
Diploma Fees	2,900.22	
University Libraries	674.97	
Laboratory Fees—Hopkins Marine Station.....	1,129.67	
Alumni Directory	1,400.00	
President's Contingent Fund	3,011.48	
Registrar	2,619.29	
Appointment Secretary	3,983.08	
Comptroller	307.85	
		458,341.62
Income from Sales		
Animal Farm	\$106.10	
Arboretum Wood	877.45	
Nursery	6,050.72	
Palo Alto Farm.....	1,128.76	
Steam	763.80	
Rock Crusher	6,417.51	
Printing and Binding (Net Income Sch. J-1, pp. 110, 111).....	95,447.13	
Medical School Dispensary (Net Income Sch. G, p. 101).....	38,372.04	
		149,162.51
Income from Other Sources		
Museums	\$1,715.50	
Assembly Hall	1,073.00	
Medical School—San Francisco.....	24,756.76	
Lane Hospital (Net Income Sch. G, p. 101).....	154,244.70	
Lane Medical Library	2,750.00	
Discount on Purchases	2,959.31	
Radium Funds Transferred to Purchase New Radium.....	2,776.40	
Cash Overs and Shorts—Comptroller and Hospital.....	140.28	
Advertising Privileges	132.00	
		190,547.95
Net Income		\$2,438,459.09

SCHEDULE G

Statement of Income and Operations Medical School in San Francisco for
Year Ending August 31, 1921.

DESCRIPTION	
STANFORD HOSPITAL (INCOME SECTION)	
Income	
Private Patients	\$358,632.94
Clinic Patients	20,940.65
Nurses' Tuition Fees (50 per cent of total).....	472.50
Total Income	\$380,046.09
Expenses	
Pro Rata: Hospital Net Expenses.....	\$369,706.36
Total Expenses	\$369,706.36
Income Over Expenses—Stanford Hospital.....	\$10,339.73
LANE HOSPITAL (EDUCATIONAL)	
Income	
Private Patients	\$54,114.61
Clinic Patients	99,657.59
Nurses' Tuition Fees (50 per cent of total).....	472.50
Total Income	\$154,244.70
Expenses	
Pro Rata: Hospital Net Expenses.....	\$195,956.69
Total Expenses	\$195,956.69
Income Over Expenses—Lane Hospital.....	— \$41,711.99
Hospital Income Over Expenses—Combined.....	— \$31,372.26
MEDICAL SCHOOL	
Income	
Educational	
Tuition Fees	\$10,163.84
Special Fees	107.00
Dental Fees	684.15
Other Income	13,801.77
Total Income	\$24,756.76
Expenses	
Educational	125,080.03
Income Over Expenses.....	— \$100,323.27
DISPENSARY	
Sales—Total Income	\$38,372.04
Expenses—Total Expense	25,971.71
Income Over Expenses.....	\$12,400.33
Total Income Over Expenses—Medical School.....	— \$37,922.94
Total—Medical School in San Francisco—Income Over Expenses.....	— 119,295.20

SCHEDULE H
Analysis of Expenditures Year Ending Aug. 31, 1921.

DESCRIPTION	Total	Expense	Capital
ADMINISTRATIVE AND GENERAL			
Executive Offices			
Board of Trustees	\$50.80	\$50.80	
President's Office	26,009.66	25,465.71	\$543.95
Treasurer's Office	9,096.71	9,096.71	
Secretary's Office	2.43	2.43	
Registrar's Office	34,240.37	33,810.92	429.45
Comptroller's Office	39,545.11	37,363.84	2,191.27
Legal Counsel	2,982.59	2,982.59	
Purchasing Office	3,427.58	3,427.58	
Engineer's Office	5,536.14	5,536.14	
Totals	\$120,891.39	\$117,726.72	\$3,164.67
Other General Offices			
Appointment Secretary	\$3,608.28	\$3,608.28	
Publications Committee	3,836.79	3,836.79	
Public Exercises Committee	1,744.45	1,744.45	
Dean of Men	6,271.85	6,271.85	
Dean of Women	4,439.87	4,439.87	
Lower Division	2,192.27	2,192.27	
Alumni Secretary	7,649.64	7,649.64	
Research Committee	1,470.55	780.97	\$689.58
Totals	\$36,213.70	\$35,524.12	\$689.58
General Accounts			
Insurance—Undistributed	\$7,486.58	\$7,486.58	
Interest	2,150.29	2,150.29	
Auditing and Accounting System—Expense	1,554.68	1,554.68	
Light and Gas—Undistributed	6,443.75	6,443.75	
Publicity	2,303.56	2,303.56	
*Telephone and Tel.—Undistrib.—Sal., \$2,182.05	2,898.50	2,898.50	
Taxes—Undistributed	11,665.51	11,665.51	
University Scholarships	5,866.44	5,866.44	
Gift Scholarships	4,700.90	4,700.90	
Liability Insurance	3,000.00	3,000.00	
Pension Fund	46,500.00	46,500.00	
Liquidation Building Fund Loan	100,000.00	100,000.00	
General Expense	1,886.31	1,886.31	
Convention Trav. Exp. and Membership Dues	7,068.73	7,068.73	
Surp. Income Exp. on Educ. Plant (Sch. I, p. 108)	21,432.63		\$21,432.63
Totals	\$224,957.88	\$203,525.25	\$21,432.63
Total Administrative and General	\$382,062.97	\$356,776.09	\$25,236.88

* Telephone and Telegraph Undistributed: Salaries, \$2,182.05; Undistributed Service (Trunk Lines), \$716.45; Total, \$2,898.50.

SCHEDULE H—Continued
Analysis of Expenditures Year Ending Aug. 31, 1921.

DESCRIPTION	Total	Expense	Capital
INSTRUCTION AND RESEARCH—SCHOOLS AND DEPARTMENTS			
School of Medicine (Sch. G, p. 101)			
Medical School—San Francisco	\$125,080.03	\$125,080.03	
Medical School—Gifts Exp. for Specific Research	21,961.26	21,961.26	
Medical School—Dispensary	25,971.71	25,971.71	
Totals	\$173,013.00	\$173,013.00	
School of Law	\$43,864.47	\$43,864.47	
School of Education	\$51,737.58	\$50,820.18	\$317.40
Engineering Group			
Civil Engineering	\$30,925.60	\$30,065.60	\$860.00
Electrical Engineering	14,992.03	14,236.47	705.56
Mechanical Engineering	49,057.41	47,433.88	1,623.53
Mining and Metallurgy	30,345.88	29,115.24	1,230.64
Geology	34,170.66	31,821.87	2,348.79
Totals	\$159,491.58	\$152,723.06	\$3,768.52
Biological Group			
Bacteriology	\$19,392.40	\$16,872.08	\$2,520.32
Botany	23,664.28	23,489.28	175.00
Entomology	1,892.12	1,892.12	
Zoology	35,349.30	35,087.35	261.95
Anatomy	26,582.72	26,582.72	
Physiology	23,649.33	23,203.10	446.23
Totals	\$130,530.15	\$127,126.65	\$3,403.50
Languages, Ancient and Modern			
English	\$57,165.60	\$57,165.60	
German	20,365.98	20,365.98	
Greek	8,869.90	8,869.90	
Latin	12,700.29	12,700.29	
Romanic	34,696.86	34,696.86	
Slavic	1,530.20	1,530.20	
Totals	\$135,328.83	\$135,328.83	
History, Economics, and Political Science			
History	\$36,236.32	\$36,236.32	
Economics	36,271.87	36,271.87	
Political Science	13,472.56	13,472.56	
Totals	\$86,080.75	\$86,080.75	
Amount Forwarded	\$779,996.36	\$768,006.94	\$11,089.42

SCHEDULE H—Continued
Analysis of Expenditures Year Ending Aug. 31, 1921.

DESCRIPTION	Total	Expense	Capital
Amount Brought Forward.....	\$779,906.36	\$768,906.94	\$11,089.42
Mathematics, Physics, and Chemistry			
Applied Mathematics	\$22,170.93	\$22,170.93	
Mathematics	15,964.75	15,964.75	
Physics	32,884.82	30,335.74	\$2,549.08
Chemistry	83,582.07	81,172.93	2,409.14
Totals	\$154,602.57	\$149,644.35	\$4,958.22
Psychology and Philosophy			
Psychology	\$16,669.49	\$16,402.99	\$266.50
Philosophy	9,585.70	9,585.70	
Totals	\$26,255.19	\$25,988.69	\$266.50
Food Research Institute.....	\$5,926.03	\$5,926.03	
Total instruction and research.....	\$66,780.15	\$60,466.01	\$16,314.14
INDEPENDENT DEPARTMENTS AND DIVISIONS			
University Libraries	\$39,439.95	\$50,584.53	\$38,905.42
Lane Medical Library	16,421.24	4,155.96	12,265.28
Totals	\$105,911.19	\$54,740.49	\$51,170.70
Gymnasiums			
Encina Gymnasium	*\$6,316.27	\$6,316.27	
Roble Gymnasium	17,930.89	17,930.89	
Totals	\$24,247.16	\$24,247.16	
University Museum	\$7,367.13	\$6,968.80	\$378.33
Hopkins Marine Station.....	\$2,394.05	\$2,170.95	\$223.10
Memorial Church	\$14,224.05	\$14,224.05	
Lane Hospital			
Per Report of Medical Division (Sch. G, p. 101)	\$195,832.31	\$195,956.69	— \$123.38
Military Training	\$2,569.17	\$2,507.17	\$62.00
Assembly Hall	\$622.79	\$622.79	
Total Independent Depts. and Divisions.....	\$353,168.85	\$301,458.10	\$51,710.75

* Includes salary of Medical Adviser, janitorial expenses and expense of Physical Education Summer School. Balance of operating expenses of departments carried by Board of Athletic Control from Gymnasium fees, gate receipts, etc.

SCHEDULE H—Continued
Analysis of Expenditures Year Ending Aug. 31, 1921.

DESCRIPTION	Total	Expense	Capital
OPERATIONS AND MAINTENANCE OF EDUCATIONAL PLANT			
Repairs to Buildings, Structures and Improvements			
Undistributed	\$5,368.08	\$5,368.08	
Administration Building	1,086.65	1,086.65	
President's House	3,629.84	3,629.84	
Old Greek and Latin Building	2,060.76	2,060.76	
Searsville Dam and Reservoir	181.49	181.49	
Corporation Yard Buildings	750.23	750.23	
New Library	572.21	572.21	
Physics Building	37.74	37.74	
Zoology Building	55.67	55.67	
Chemistry Building	2,407.50	2,407.50	
Museum Building	2.78	2.78	
Arts Building	9.32	9.32	
Memorial Church	370.21	370.21	
Hopkins Marine Station	183.02	183.02	
Lane Medical Library Building	176.62	176.62	
Roble Gymnasium	709.63	709.63	
Encina Gymnasium	838.23	838.23	
Military Barracks	304.44	304.44	
Medical School—San Francisco	4,164.43	4,164.43	
Totals	\$22,908.80	\$22,908.80	
Reconstruction and Alteration—Corporation Yard ..	\$12,179.03	\$12,179.03	
Maintenance of Grounds			
General	\$35,673.82	\$35,673.82	
Arboretum Wood	656.27	656.27	
Nursery	6,676.60	6,676.60	
Streets, Walks, and Roads	2,650.47	2,650.47	
Totals	\$45,657.16	\$45,657.16	
Janitors			
University and Hopkins Marine Station	\$26,004.94	\$26,004.94	
Lane Medical Library	2,211.72	2,211.72	
Medical School—San Francisco	5,146.27	5,146.27	
Totals	\$33,362.93	\$33,362.93	
Watchmen	\$6,875.97	\$6,875.97	
Heating			
University	\$63,767.46	\$63,767.46	
Lane Medical Library	2,143.85	2,143.85	
Medical School—San Francisco	6,297.14	6,297.14	
Hopkins Marine Station	243.06	243.06	
Totals	\$72,451.51	\$72,451.51	
Total Operation and Maintenance Educ. Pl.	\$193,435.40	\$193,435.40	

SCHEDULE H—Continued
Analysis of Expenditures Year Ending Aug. 31, 1921.

DESCRIPTION	Total	Expense	Capital
SERVICE DEPARTMENTS			
Printing and Binding			
New Press Equipment	\$7,419.45		\$7,419.45
Reserved for New Press Equipment	6,138.36	\$6,138.36	
Cost Completed Work (Net Inc., Sch. J-1, pp. 110, 111)	87,608.90	87,608.90	
Totals	\$101,166.71	\$93,747.26	\$7,419.45
Stores Keeping	\$7,179.55	\$7,179.55	
Rock Quarry (Detailed Sch. J-1, pp. 110, 111)	\$4,802.17	\$4,802.17	
Corporation Yard			
General	\$5,897.37	\$4,121.87	\$1,775.50
Carpenters	—40.48	—40.48	
Electricians	1,690.81	1,690.81	
Laborers	117.83	117.83	
Plumbers	345.09	345.09	
Teamsters	—138.09	—138.09	
Painters	—904.54	—904.54	
Blacksmiths	361.06	313.82	47.24
Shop Overhead Absorbed	—4,671.91	—4,671.91	
Totals	\$2,657.14	\$834.40	\$1,822.74
Mimeograph and Stenographic Bureau	—\$398.78	—\$398.78	
Fire Department	\$3,081.05	\$3,081.05	
Water Supply System (Not Income Section)	\$345.78		\$345.78
Electric Lighting System	\$3,154.54	\$1,842.95	\$1,311.59
Animal Farm	\$56.37	\$56.37	
Total Service Departments	\$122,044.53	\$111,144.97	\$10,899.56
INVESTMENT ENTERPRISES			
Real Estate—Country			
Palo Alto Farm—San Mateo and S. O. Co's.	\$25,133.03	\$25,133.03	
Marin County	713.33	713.33	
Totals	\$25,846.36	\$25,846.36	
Real Estate—City			
San Francisco	\$1,973.88	\$1,973.88	
San Francisco—Restricted	738.56	738.56	
Alameda	1,899.81	1,899.81	
Seattle	1,037.17	1,037.17	
Oakland (Buckel House)	166.20	166.20	
Totals	\$5,815.62	\$5,815.62	
Total Investment Enterprises	\$31,661.98	\$31,661.98	

SCHEDULE H—Concluded
Analysis of Expenditures Year Ending Aug. 31, 1921.

DESCRIPTION	Total	Expense	Capital
INCOME SECTION EDUCATIONAL PLANT (Net Income Sch. J, p. 109)			
Encina Hall -----	\$24,915.07	\$24,915.07	
Roble Hall -----	18,054.82	18,054.82	
Sequoia Hall -----	7,077.24	7,077.24	
Alvarado Hall -----	2,524.65	2,524.65	
Real Estate—Campus -----	16,272.52	16,272.52	
Stanford University Hospital -----	369,706.36	369,706.36	
Electric Railway Lines -----	114.94	114.94	
Water Supply System -----	8,218.96	8,218.96	
Electric Lighting System—Subdivision -----	107.13	107.13	
Roads and Walks—Subdivision -----	972.26	972.26	
Sewerage System -----	172.12	172.12	
Total Income Section Educational Plant -----	\$448,136.07	\$448,136.07	

SCHEDULE I

Detailed Analysis of Charges to Income Expended on Educational Plant,
Year Ending August 31, 1921.

DESCRIPTION	Detail	Total
New Roads		\$2,367.96
Military Department		
Blacksmith Shop	\$689.97	
Cell Dining Room with Plaster Board	60.34	
Extension to Horse Sheds	1,132.23	1,882.54
Lane Hospital Building		
Additions to Balconies	\$235.00	
Reversible Window Fixtures	120.00	355.00
Purchase of 2.587 Acres at Hopkins Marine Station		3,007.20
Lane Library Stacks—Additions; this amount being appropriated from Income of Lane Funds		7,684.78
25.24 mm. Radium Purchased for Hospital. This amount was approp. from Rad. Fd. and incl. in Inc. Sch. F (pp. 99, 100).		2,776.40
Equipment—General Purposes		
Simplex Motion Picture Mach. to be used at Assembly Hall	\$570.50	
Power House Equipment: Sold	— 250.00	320.50
Buildings		
Roble Hall—Install. ventilat. system in kitchen and pantry	\$677.72	
Physiology Bldg.—Installing ventilating system	260.81	
Chemical Bldg.—Installing draft outlet	354.62	
Band Stand—Fixtures removed	— 35.00	
Corp. Yard Bldgs.—Barns and bldgs. sold or demolished	— 2,305.00	— 1,046.85
Women's Athletic Fields		
New Tennis Courts and Hockey Field at Roble Gymnasium	\$4,974.81	
Backstop for Hockey Field at Roble Gymnasium	168.01	5,142.82
Water Development—Peterson Well		216.61
Campus Water System		
Searsville Line for service of Nyquist and Hackenberger houses on Governor's Ave. (charged to this account for reason of no revenue increase; houses moved)	\$57.15	
Searsville Water Line to Tomb	159.32	
Domestic Water Line to Dynamics Bldg.	44.25	260.72
Sewerage System		
Sewerage System at Boat House	\$202.61	
Sewerage Manhole at New Union Bldg.	85.08	287.69
Total Expenditures		\$23,255.37
Less Equipment Purchased out of Reserves but included in expenses of the respective departments for comparative purposes. Corporation Yard Equipment (Depreciation Reserve)		1,822.74
Total (Sch. H, pp. 102-107)		\$21,432.63

SCHEDULE J
Statement of Income Section Educational Plant—Operations for Year Ended August 31, 1921.

DESCRIPTION	Investment 8-31-20	Investment 8-31-21	Average Investment for 12 mos.	Required 5 Pct. Net Income	Gross Income	Expenses	Net Income	Over or Under 5 Pct. Required	Actual Yield
Campus Dwellings	\$244,245.97	\$131,940.23	\$217,790.25	\$10,389.51	\$26,145.85	\$16,272.32	\$9,873.53	—\$516.18	4.5 Pct. +
Stanford Hospital	587,884.69	589,376.90	589,376.90*	27,463.95	380,046.09	369,706.96	10,339.73	—19,129.12	1.7 Pct. +
Dormitories									
Enclina Hall					39,755.95	24,915.07	14,840.88		
Robie Hall					26,012.13	18,054.32	8,557.81		
Sequoia Hall					8,087.12	7,077.24	969.88		
Alvarado Hall					756.75	2,524.65	—1,767.90	7,590.17	7.5 Pct. +
Electric Railroad	38,922.24	38,922.24	38,922.24	1,946.11	2,328.00	114.94	2,213.06	266.95	5.7 Pct. —
Gas Pipe Line	8,127.22	8,312.62	8,200.40	410.02	706.95		796.95	386.93	9.7 Pct. +
Water System									
Subdivision Water System	8,144.07	8,960.74	8,397.00						
Campus Water Supply System	90,695.06	90,695.06	90,695.06	4,992.90	6,813.88	8,218.96	—1,405.08	—6,397.98	—1.4 Pct. +
Highway New Wells		8,479.78	715.68						
Campus Lighting System	1,829.84	1,830.97	1,830.12						
Campus Electric Power Lines	3,180.26	3,186.26	3,186.26						
Subdivision									
Sewers	8,010.25	9,124.27	8,107.49						
Lighting System	353.74	1,141.30	872.73						
Fire Protection	474.80	474.80	474.80	3,187.41	11,708.81†	{ 172.12 } { 107.13 }	10,517.31	7,329.90	16.5 Pct. —
Surveying	1,167.85	1,167.85	1,167.85						
Roads and Walks	47,684.92	47,795.51	47,684.92						
Building Site, Governor's Ave.		2,131.62	424.40						
	\$1,340,726.91	\$1,243,540.11	\$1,317,896.19	\$65,394.80	\$503,061.54	\$448,136.07	\$54,925.47	—\$10,469.33	4.2 Pct. —

* Equipment purchased in 1919-20, \$1,492.21 belonging to Stanford Hospital.

† Income from Real Estate—Campus.

SCHEDULE J-1

Statement of Operations of Miscellaneous Income Producing Units Year Ending
Aug. 31, 1921.

ROCK CRUSHER			
Gross Sales		\$5,663.01	
Cost of Sales			
1920 Inventory Value of Rock Sold.....	\$4,451.00		
Loading and Scraping.....	239.39		
Screening	111.78	4,802.17	
Net Profit from Operation.....		\$860.84	
Income from Royalties from A. Hess & Sons			
May, 1921—1120 yds. @ 25c.....	\$280.00		
June, 1921— 970 yds. @ 25c.....	242.50		
July, 1921— 251 yds. @ 25c.....	62.75		
Aug. 1921— 677 yds. @ 25c.....	169.25	754.50	
Total Net Profit from Rock Crusher.....			\$1,615.34
NURSERY			
Gross Sales		\$6,050.72	
Operating Expenses			
Labor	\$5,218.56		
Plants, etc.	1,155.67		
Plowing and Planting.....	54.17		
Water System to Nursery.....	248.20	6,676.60	
Total Net Loss			\$625.88
ARBORETUM WOOD			
Gross Sales		\$977.45	
Cost of Sales (Cutting of Wood, etc.).....		656.27	
Net Profit from Arboretum Wood.....			\$221.18
ASSEMBLY HALL			
Income from Rentals and Sale of Tickets.....		\$1,073.00	
Operating Expenses			
Wages Paid to Ushers.....	\$173.55		
Power Used for Lighting.....	268.73		
Tickets	135.00		
Repairs and Miscellaneous Charges.....	45.51	622.79	
Net Profit from Assembly Hall.....			\$450.21

SCHEDULE J-1—Concluded
Statement of Operations of Miscellaneous Income Producing Units Year Ending
Aug. 31, 1921.

UNIVERSITY PRESS			
Sales -----			\$95,447.13
Cost of Sales			
Stock Consumed -----	\$33,337.69		
Wages -----	44,955.58		
Spolled Work -----	111.31		
Supplies -----	1,747.74		
Maintenance and Repairs -----	762.43		
Insurance -----	301.14		
Depreciation -----	4,208.77		
Power -----	257.60		
Total Cost of Printing, etc.-----		\$85,682.26	
Administration and General			
Salaries (Office) -----	\$3,157.51		
Office Supplies -----	287.42		
Transport'n and Communication -----	300.20		
Miscellaneous -----	389.88		
Total Administration and General -----		7,135.01	
Total Cost of Production 1921 -----		\$92,817.27	
Inventory of Work in Process Sept. 1920 -----		2,675.86	
		\$95,493.13	
Less Inventory Wk. in Process Aug. 31, 1921 -----		7,884.23*	
Cost of Sales -----			\$87,608.90
Net Profit -----			\$7,838.23†

* This represents the actual inventory of Work in Process, being \$7,366.62 unfinished work for departments and \$517.61 unfinished work other than University and included in Merchandise, Comptroller's Schedule "C."

† The Net Profit of \$7,838.23 was reserved to purchase new press equipment.

SCHEDULE K
Surplus Analysis Year Ended August 31, 1921.

Current Surplus—First of Period.....			None
ADJUSTMENT OF CURRENT SURPLUS—CREDITS			
Sales			
Miscellaneous Scrap from Corp. Yard and various places during year.....	\$819.08		
Old Roofing Tile.....	350.00		
39 Yards Sandstone.....	39.00		
Furniture to Chinese Students.....	286.50		
Steam Boiler and Engines from Rock Crusher (previously written off)	250.00		
Statuary to Vickery, Atkins & Torrey, May, 1920.....	100.00		
Urban Safe (replaced) from Comptroller's Office.....	55.00		
Deming, Hall & Mason's Safe (replaced) from Comptroller's Office	70.00		
Adjustment of Repairs to Houses and Cottage on account of sale of same.....	9.22	\$1,978.80	
University Press—New Press Equipment Reserve (Appropriated to Purchase Equipment Charged to Current Equipment Account)		5,719.58	
Other Adjustments			
To write off anticipated bills of Vina Ranch, originally set up 10-31-19. No bills were presented by creditors.			
Pacific Gas & Electric Company.....	\$400.00		
W. H. Worley.....	265.70	\$665.70	
Accounts Receivable previously reserved, against which have been paid			
W. M. Carruthers.....	\$14.95		
Sigma Alpha Epsilon.....	35.36		
Stanford Sequoia	50.00	100.31	
Allowance on oil container returned to Marysville Station Associated Oil Company from Vina Ranch in April, 1918.....	24.00	790.01	
Surplus as Affected by Deferred Charges.....		10,147.28	
Total Credit Adjustments.....		\$18,635.62	

SCHEDULE K—Concluded
Surplus Analysis Year Ended August 31, 1921.

Forward Total Credit Adjustments.....		\$18,685.02	
ADJUSTMENT CURRENT SURPLUS—CHARGES			
Contracts of Sale—Vina Ranch—Adjustments			
To charge off interest—Gorrill, Jones & Van Loben Sele, per letter Treasurer's Office dated Feb. 16, 1921.....	\$691.06		
Refund of Taxes to Godbolt, Peake, Champlin & Godbolt, difference between 2480.5 acres and 2291.5 acres paid in 1920.....	156.13		
Refund of Taxes to Peter Hansen for 1918-19.....	15.25	862.43	
Other Adjustments			
To adjust Room Deposits Encina Hall years 1919 and 1920	\$15.00		
Credit Memo. of Pittsburgh Electric Specialties Company of Oct. 12, 1916, never taken up for the reason that they have gone out of business.....	3.15		
Unaccounted Difference in Settlement of Rent on Watcher-Bergman Contract. Total income and expense allowed charged to respective accounts instead of Surplus	42.54		
Cancelling Charge against Kappa Kappa Gamma made on PD 635 in August, 1920, as this was a duplicate of charge made in June, '18.....	5.50		
Full amount paid P. J. Peterson under agreement dated May 8, 1918, relative to cancellation of lease dated Oct. 1, 1916, covering Lots Nos. 76 and 77, being ½ income derived from cancelled lease	15.00		
Accounts Receivable written off			
Mrs. G. Nekervis—1917.....	\$6.00		
R. Zeldler —1918.....	10.85		
W. H. Cokely —1919.....	42.48		
Adjustment of Accounts Receivable Ledger with General Ledger when transferred from S. F. Office, unable to locate	1.76		
B. L. Chew (Rent) 1919.....	2.50	63.59	154.78
Total Charges		\$1,007.21	
Net Credit Adjustments.....		\$17,628.41	
Expenses in Excess of Income.....		58,839.86	
Deficit August 31, 1921 (Sch. B, p. 94).....			\$41,211.45

SCHEDULE L
Educational Plant Assets—Campus, for Year Ended August 31, 1921.

DESCRIPTION	August 31 1920	Increase or — Decrease	August 31 1921
BUILDINGS AND STRUCTURES			
Educational Purposes			
Aerodynamic Laboratory	\$10,344.28	— \$68.91	\$10,275.37
Alterations Applied Mathematics Building	51.87		51.87
Alterations Philosophy Building	13,904.00		13,904.00
Artificial Stone Sidewalks	21,321.91		21,321.91
Assay Laboratory Alterations	10,536.54		10,536.54
Assembly Hall and Old Library Building (Administration Building)	214,150.86		214,150.86
Bacteriological Laboratory Alterations	29,299.59		29,299.59
Chemical Laboratory Alterations	6,302.49		6,302.49
Chemistry Building and Laboratory	233,664.87	354.62	234,019.49
Class Building Alterations	9,918.18		9,918.18
Engineering Laboratory	52,327.38		52,327.38
Geological Laboratory	211,980.52		211,980.52
High Tension Laboratory	4,736.53		4,736.53
Hopkins Marine Biological Laboratory	24,533.38		24,533.38
Hydraulic Laboratory	35,036.33		35,036.33
Inner Quad	572,564.87		572,564.87
Library Buildings	648,141.74		648,141.74
Mechanical Engineering Building	144,419.20		144,419.20
Metallurgy Building Extension	14,295.86		14,295.86
Metallurgy Laboratory	16,950.83		16,950.83
Military Buildings	14,814.12	1,982.54	16,696.66
Museum and Additions	563,073.29		563,073.29
Natural Science Building	284,361.16		284,361.16
Outer Quadrangle	291,879.22		291,879.22
Physiology Building Additions		260.81	260.81
Primary School	4,385.42		4,385.42
Quad Gateways	1,444.00		1,444.00
Remodeling Museum	22,728.89		22,728.89
T. W. Stanford Art Gallery	89,305.91		89,305.91
Total Educational Purposes	\$3,546,473.24	\$2,429.06	\$3,548,902.30
Recreational Purposes			
Band Stand	\$4,843.84	— \$35.00	\$4,808.84
Men's Gymnasium	110,457.29		110,457.29
Women's Gymnasium	6,701.17		6,701.17
Women's Swimming Pool	25,092.94		25,092.94
Total Recreational Purposes	\$147,095.24	— \$35.00	\$147,060.24

SCHEDULE L—Continued
Educational Plant Assets—Campus, for Year Ended August 31, 1921.

DESCRIPTION	August 31 1920	Increase or — Decrease	August 31 1921
BUILDINGS AND STRUCTURES			
General Purposes			
Arcade Fire Walls.....	\$1,243.45		\$1,243.45
Electrical Sub-station	39,559.44	— \$1,122.94	38,436.50
Encina Hall	476,987.47		476,987.47
Encina Hall Alterations.....	78,284.26		78,284.26
Fire Truck House.....	3,611.30		3,611.30
Forge and Foundry.....	8,273.75		8,273.75
Garbage Crematory	740.15		740.15
Machine Shop Extension.....	8,175.33		8,175.33
New Forge and Foundry.....	27,677.72		27,677.72
New Stanford Union.....		119,535.14	119,535.14
Power House and Oil Cisterns.....	11,627.87		11,627.87
President's House	145,710.94	— 364.14	145,346.80
President's House Tennis Courts.....	249.49	1,040.61	1,290.10
Roble Hall	377,108.34	677.72	377,781.06
Searsville Dam and Reservoir.....	4,660.16		4,660.16
Sequoia Hall	73,990.81		73,990.81
Sequoia Hall Alterations.....	4,522.86		4,522.86
Stanford University Press Building.....	22,620.17		22,620.17
Store Room Construction.....	2,789.82		2,789.82
Transformer Vaults	373.75		373.75
University Power House (Heating Plant).....	66,982.46		66,982.46
Water Development	21,942.77	13,764.65	35,707.42
Total General Purposes.....	\$1,377,127.31	\$133,531.04	\$1,510,658.35
Unclassified			
Bronze Group Stanford Family.....	\$7,250.00		\$7,250.00
Dwellings, Stores, Other Campus Bldgs....	271,052.63	— \$139,112.34	131,940.29
Lagunita Fountain	1,027.05		1,027.05
Main Entrance	970.15		970.15
Mausoleum	12,168.88		12,168.88
Memorial Church	622,725.74		622,725.74
Memorial Court	5,851.58		5,851.58
Terrace	35,524.52		35,524.52
Total Unclassified	\$956,570.55	— \$139,112.34	\$817,458.21

SCHEDULE L—Continued
Educational Plant Assets—Campus, for Year Ended August 31, 1921.

	DESCRIPTION	August 31 1920	Increase or — Decrease	August 31 1921
	IMPROVEMENTS			
Recreational				
	Football and Baseball Fields.....	\$2,000.00		\$2,000.00
	Women's Tennis Courts and Hockey Field.....		\$5,142.82	5,142.82
	Total Recreational	\$2,000.00	\$5,142.82	\$7,142.82
General				
	Bulkhead Palo Alto Tree.....	\$1,740.75		\$1,740.75
	Campus Electric Power Line Extension....	3,186.26		3,186.26
	Campus Lighting System.....	4,115.94	\$1,252.19	5,368.13
	Campus Water System.....	176,453.76	606.50	177,060.26
	Drainage	5,154.27		5,154.27
	Electric Railroad	38,922.24		38,922.24
	Fire Protection	474.80		474.80
	Gas Pipe Line.....	8,127.22	185.40	8,312.62
	Grounds Back of New Library.....	12.84		12.84
	Inner Court	6,286.30		6,286.30
	Leveling and Beautifying Inner Quad....	9,358.91		9,358.91
	Quad Gardens	1,380.64		1,380.64
	Retaining Wall	9,187.73		9,187.73
	Sewerage	22,930.79	287.69	23,218.48
	Subdivision Grading and Leveling.....		1,264.87	1,264.87
	Subdivision Lighting System.....	353.74	1,642.45	1,996.19
	Subdivision Roads and Walks.....	47,684.92	110.59	47,795.51
	Subdivision Sewerage	8,010.25	1,114.02	9,124.27
	Subdivision Surveying	1,167.85		1,167.85
	Subdivision Water System	8,144.07	816.67	8,960.74
	Subdivision Governor's Ave. Site Grading and Leveling		866.65	866.65
	Surface Drainage System.....	4,783.25		4,783.25
	Tunnel	13,733.97		13,733.97
	University Roads, Walks, etc.....	166,923.93	2,367.96	169,291.89
	Total General	\$538,134.43	\$10,514.99	\$548,649.42
Unclassified				
	Curb at Mausoleum.....	\$61.91		\$61.91

SCHEDULE L—Continued
Educational Plant Assets—Campus, for Year Ended August 31, 1921.

DESCRIPTION	August 31 1920	Increase or — Decrease	August 31 1921
EQUIPMENT			
Educational			
Department Equipment	\$595,710.90	\$18,043.07	\$613,753.97
Egyptian Curios	4,639.01		4,639.01
Electric Lighting System	794.36	— 794.36	
Incinerator (Anatomy and Bacteriology) ..	579.11		579.11
Japanese Curios	6,747.77		6,747.77
Library Books	598,702.64	38,905.42	637,608.06
Mechanician Shop Equipment	2,733.46		2,733.46
Museum Exhibits	1,404.79	378.33	1,783.12
New Library Bldg. Equipment	42,448.46	6,082.74	48,531.20
Total Educational	\$1,253,760.50	\$62,615.20	\$1,316,375.70
General			
Comptroller's Office Furniture	\$197.29	\$2,813.77	\$3,011.06
Corporation Yard (Blacksmith Shop)	87.29		87.29
Corporation Yard (General Yard)	25,819.84		25,819.84
Fire Truck House Equipment	1,111.95		1,111.95
Power House Electric Equipment	25,163.83	— 250.00	24,913.83
Power House Equipment	84,073.64	1,809.55	85,883.19
President's Office Furniture	34,854.78		34,854.78
President's Office Furniture		543.95	543.95
Stanford University Press Equipment	33,997.23	7,882.00	41,879.23
Steam Heating Extension	933.83		933.83
Store Room Furniture	370.22		370.22
University Avenue Lighting System	7,442.58		7,442.58
Total General	\$214,052.48	\$12,799.27	\$226,851.75
Unclassified			
Assembly Hall Equipment		\$570.50	\$570.50
Memorial Church Furniture	\$1,227.46		1,227.46
Total Unclassified	\$1,227.46	\$570.50	\$1,797.96
UNSEGREGATED			
Educational			
Pacific Grove Laboratory and Grounds (Hopkins Marine Station)	\$8,756.60	\$3,007.20	\$11,763.80
General			
Corporation Yards	\$50,842.48	— \$12,312.75	\$38,029.73
Palo Alto Farm and Improvements	879,245.36	3,406.67	882,652.03
Sundry Tracts adjacent to P. A. Farm ..	187,318.64		187,318.64
Total General	\$1,117,406.48	— \$9,406.08	\$1,108,000.40

SCHEDULE L—Continued
Educational Plant Assets—Campus, for Year Ended August 31, 1921.

DESCRIPTION	August 31 1920	Increase or — Decrease	August 31 1921
EDUCATIONAL PLANT ASSETS—SAN FRANCISCO			
LAND			
Educational			
Lane Medical Library Lot.....	\$18,633.66		\$18,633.66
BUILDINGS AND STRUCTURES			
Educational			
Lane Hospital	\$775.00	\$11,662.90	\$12,437.90
Medical Library Building.....	138,425.56	7,684.78	146,110.34
Nurses' Home	95.00	305,655.59	305,750.59
Stanford University Hospital (New Wing)	507,478.00		507,478.00
Total Educational	\$646,773.56	\$325,003.27	\$971,776.83
General			
New Power House and Permanent Improvements Lane Hospital.....	\$90,622.46	\$9,511.00	\$100,133.46
EQUIPMENT			
Educational			
Barkan Fund Lane Library Books—Medical History		\$3,315.58	\$3,315.58
Barkan Fund Lane Library Books	\$3,510.32	483.45	3,993.77
Lane Hospital Equipment and Apparatus.....	38,831.13	— 1,492.21	37,338.92
Lane Med. Lib. Books and Periodicals.....	106,072.11	8,466.25	114,538.36
Lane Med. Lib. Furniture and Equipment	5,022.08		5,022.08
Med. Dept. S. F. Equip. and Apparatus.....	31,700.79		31,700.79
Nurses' Home Equipment.....	1,310.74		1,310.74
Stanford Hospital	79,534.54	1,492.21	81,026.75
Radium	12,000.00	2,776.40	14,776.40
Total Educational	\$277,981.71	\$15,041.68	\$293,023.39
General			
San Francisco Office—Trustees' Furniture	\$2,798.68		\$2,798.68
UNSEGREGATED			
Educational			
Medical Dept. New Lands and Buildings.....	\$167,029.39		\$167,029.39
Stanford Univ. Med. School and Grounds.....	139,911.90		139,911.90
Total Educational	\$306,941.29		\$306,941.29
Total Educational Plant Assets.....	\$10,506,417.56	\$431,612.61	\$10,938,030.17
Less: Educational Plant Assets Transferred to Investment Section.....	2,247,273.02		2,131,754.49
Total Educational Plant Assets (Schs. A, pp. 88, 89, and A-2, pp. 92, 93).....	\$8,259,144.54		\$8,806,275.68

SCHEDULE L—Continued
Educational Plant Assets for Year Ended August 31, 1921.

SUMMARY	August 31 1920	Increase or — Decrease	August 31 1921
BUILDINGS AND STRUCTURES			
Educational Purposes			
Campus and Hopkins Marine Station-----	\$3,546,473.24	\$2,429.06	\$3,548,902.30
San Francisco -----	646,773.56	325,003.27	971,776.83
Total -----	\$4,193,246.80	\$327,432.33	\$4,520,679.13
Recreational Purposes			
Campus -----	\$147,095.24	— \$35.00	\$147,060.24
General Purposes			
Campus -----	\$1,377,127.31	\$133,531.04	\$1,510,658.35
San Francisco -----	90,622.46	9,511.00	100,133.46
Total -----	\$1,467,749.77	\$143,042.04	\$1,610,791.81
Unclassified			
Campus -----	\$956,570.55	— \$139,112.34	\$817,458.21
Total Buildings and Structures -----	\$6,764,662.36	\$331,327.03	\$7,095,989.39
LAND			
Educational Purposes			
San Francisco -----	\$18,633.66		\$18,633.66
IMPROVEMENTS			
Recreational Purposes			
Campus -----	\$2,000.00	\$5,142.82	\$7,142.82
General Purposes			
Campus -----	\$538,134.43	\$10,514.99	\$548,649.42
Unclassified Purposes			
Campus -----	\$61.91		\$61.91
Total Improvements -----	\$540,196.34	\$15,657.81	\$555,854.15

SCHEDULE L—Concluded
Educational Plant Assets for Year Ended August 31, 1921.

SUMMARY	August 31 1920	Increase or — Decrease	August 31 1921
EQUIPMENT			
Educational Purposes			
Campus -----	\$1,253,760.50	\$62,615.20	\$1,316,375.70
San Francisco -----	277,981.71	15,041.68	293,023.39
Total -----	\$1,531,742.21	\$77,656.88	\$1,609,399.09
General Purposes			
Campus -----	\$214,052.48	\$12,790.27	\$226,851.75
San Francisco -----	2,798.68		2,798.68
Total -----	\$216,851.16	\$12,790.27	\$229,650.43
Unclassified			
Campus -----	\$1,227.40	\$570.50	\$1,797.90
Total Equipment -----	\$1,749,820.83	\$91,026.65	\$1,840,847.48
UNSEGREGATED			
Educational Purposes			
Hopkins Marine Station -----	\$8,756.60	\$3,007.20	\$11,763.80
San Francisco -----	306,941.20		306,941.20
Totals -----	\$315,697.80	\$3,007.20	\$318,705.00
General Purposes			
Campus -----	\$1,117,406.48	— \$9,406.08	\$1,108,000.40
Total Unsegregated -----	\$1,433,104.37	— \$6,398.88	\$1,426,705.49
Total Assets -----	\$10,506,417.56	\$431,612.61	\$10,938,030.17
Total Assets (Before Deducting Transfer Sch. A-1, pp. 90, 91) -----	\$10,506,417.56	\$431,612.61	\$10,938,030.17
Less: Educational Plant Assets Transferred to Investment Section (Sch. A-1, pp. 90, 91)	2,247,273.02		2,131,754.40
Total Educational Plant Assets (Sch. A-1, pp. 90, 91) -----	\$8,259,144.54		\$8,806,275.68
Total Plant Assets			
Campus -----			\$9,208,425.68
Hopkins Marine Station -----			36,297.18
Trustees' Offices—San Francisco -----			2,798.68
Medical School, Library and Hospitals, S. F., includes Books and Equipment -----			1,690,508.63
			\$10,938,030.17

SCHEDULE P
Income from Restricted Endowment and Special Funds, Contributions for Current Purposes and Scholarships for Year Ended August 31, 1921.

	Unexpended or Unappropriated Aug. 31, '20	Income for Year Ended Aug. 31, '21	Total	Expended for Year Included in Income	Balance Unexpended Aug. 31, '21	Remarks
RESTRICTED ENDOWMENTS						
Jane L. Stanford Endowment—Jewel Fund.....	\$4,008.90	\$21,535.00a	\$25,543.90	\$21,750.00	\$3,793.90	
Dr. A. A. Barkan Endowment for Medical Library Books.....	1,008.66	430.70a	1,439.36	483.45	955.91	
A. Borel Endowment for Medical Library Books.....		107.68a	107.68	107.68		
Edward Coleman Endowment for Med. Library Books.....		107.68a	107.68	107.68		
H. L. Dodge Memorial for Medical Library Books.....		215.35a	215.35	215.35		
The Henry Gibbons, Jr., Library of Obstet. and Gynec. Endowment.....	296.96	83.84a	379.80	191.73	188.07	
L. J. Holton Endowment for Medical Library Books.....		21.54a	21.54	21.54		
Lane Medical Lecture Fund.....	875.38	861.40a	1,736.76	1,736.76		
Lane Medical Library Sundry Endowment.....	10.79	3.53a	14.34	14.34		
C. G. Lathrop Endowment for Medical Library Books.....		215.35a	215.35	215.35		
O. G. Lathrop Endowment for Med. School Free Beds.....		430.70a	430.70	430.70		
Life Membership Subscriptions for Med. Lib. Maint.....		228.27a	228.27	228.27		
J. H. Meyer Endowment for Medical Library Books.....	753.26	107.68a	1,076.81	1,076.81		Trans. to Endow.
J. H. Meyer Endowment in Memory of A. Borel.....	1,421.07	296.11a	1,019.37	472.36	547.01	
T. W. Stanford Endowment for Psychic Investigation.....		{ 50.80c	3,971.96	2,500.00	1,471.96	
J. M. Stillman Testimonial Fund.....		{ 177.90a	177.90	90.40		Trans. to Endow. Bal. expended from Endow.
R. F. West Endowment for Lectures on Immortality and Kindred Subjects.....	920.44	{ 6.38c	1,357.52	97.50	1,357.52	
Moses Hopkins Memorial for Hospital Beds.....		{ 430.70a	430.70	430.70		
Lane Hospital Nurses' Alumni Ass'n Free Bed Endow.....		212.50a	212.50	212.50		Trans. to Endow.
W. J. Diekey Scholarship Fund.....	29.08	430.70a	460.08	600.00	—	Trans. to Current Loan Fund
Horace Davis Student Loan Fund.....		430.70a	430.70	430.70		
B. G. Higley Scholarship Fund.....		150.00a	150.00	150.00		
C. Annette Buckel Foundation.....		{ 378.80a	378.80	374.91	3.89	
Library Fund Hopkins Marine Station.....		{ 125.00b				
T. W. Stanford Fund for Psychol. and Psychic Invest.....		3.23a	3.23		3.23	
Chair Japanese History and Civilization.....		8,813.16a	8,813.16	3,000.00	5,813.16	
David Hewes Free Bed Endowment for Lane Hospital.....		1,076.75a	1,076.75	875.00	201.75	
		57.41a	57.41	57.41		
	\$9,319.42	\$39,764.67	\$49,084.09	\$33,140.91	\$15,943.18	
Income from Endowment (a).....		\$39,582.40				
Income from Gifts (b).....		125.00				
Income from Sales (c).....		57.27				
						\$39,764.67

SCHEDULE P—Continued
Income from Restricted Endowment and Special Funds, Contributions for Current Purposes and Scholarships for Year Ended August 31, 1921.

	Unexpended or Unappropriated Aug. 31, '20	Income for Year Ended Aug. 31, '21	Total	Expended for Year Included in Income	Balance Unexpended Aug. 31, '21	Remarks
RESTRICTED SPECIAL FUNDS						
Levi Cooper Lane Library of Med. and Surg. Fund		\$9,442.86a	\$9,442.86	\$15,084.78		Trans. to Endow.
Lane Medical Library Fund—Accumulated Earnings		104.82a	104.82	— 5,641.92		Trans. to Endow.
Nurses' Home Fund		100.10a	100.10	100.10		Trans. to Endow.
T. W. Stanford Museum Restoration Fund		{ 300.00b	386.08	96.08		Trans. to Endow.
Memorial Scholarship Fund		{ 96.08a		300.00		Bal. expended thru Endow.
Lane Library Membership Fees		235.00d	235.00	235.00		Trans. to Endow.
Lane Hospital Unclaimed Deposits (Deferred Liability)		{ 30.00d				
Reserve for Employer's Liability		{ 130.05a	160.05	160.05		Trs. to Prin. of Ed.
Reserve for Pension Fund		2,924.99a	2,924.99	2,924.99		Trs. to Prin. of Ed.
1920 Senior Class Endowment Sinking Fund		5,523.03a	5,523.03	5,523.03		Trs. to Prin. of Ed.
		{ 275.00b	279.44	279.44		Trs. to Prin. of Ed.
		{ 4.44a				
		\$19,166.40	\$19,166.40	\$19,166.40		
HOSPITAL SPECIAL FUNDS						
Income from Endowments (a)		\$18,326.40				
Income from Gifts (b)		575.00				
Income from Collections (c)		265.00				
		\$19,166.40				
Outpatient Obstetrical Auto Fund	\$425.00		\$425.00		\$425.00	Expend. thru Fd.
San Francisco Maternity and Stanford Aux. Clinic	134.01	\$1,256.66d	1,440.67	\$1,199.67	241.00	Expend. thru Fd.
Donation to Orthopedic Clinic	144.67	720.97d	144.67	25.00	119.67	Expend. thru Fd.
Radium Fund	2,487.82		3,208.79	3,423.86	— 215.07	Expend. thru Fd.
	\$3,241.50	\$1,977.63	\$5,219.13	\$4,048.53	\$570.60	
Income from Collections (d)		\$1,977.63				

SCHEDULE P—Continued

Income from Restricted Endowment and Special Funds, Contributions for Current Purposes and Scholarships for Year Ended August 31, 1921.

	Unexpended or Unappropriated Aug. 31, '20	Income for Year Ended Aug. 31, '21	Total	Expended for Year Included in Income	Balance Unexpended Aug. 31, '21	Remarks
SPECIAL CONTRIBUTIONS						
O. G. Lathrop Fund for Books on California.....	\$176.88		\$176.88	\$16.87	\$160.01	
T. W. Stanford Fund for Psychic Literature.....	401.94		401.94	50.39	351.55	
Mrs. H. O. Hoover Research Fund.....	188.25		188.25	188.25		
Research Fund in Oriental Diseases.....	499.45		499.45		499.45	
Sperry Flour Research Fund.....	750.00		750.00			
1916 Insulator Test Fund.....	531.11		531.11	750.00		
L. M. Terman Fellowship.....		\$ 500.00b		200.00	528.91	
E. P. Cuddebergh Fellowship.....		250.00b		200.00	300.00	
W. F. Snow Fellowship.....		300.00b		250.00		
Mrs. L. H. Hoover Fellowship.....		300.00b		300.00		
United States Social Hygiene Board—Social Dis.....		600.00b		600.00		
Theodore J. Hoover Fellowship in Mining.....	3,710.46	885.00b	4,595.46	2,903.00	1,692.46	
	200.00	600.00b	800.00	399.95	400.05	
Current Gifts						
Nelson Neurological Free Beds.....		300.00b	300.00	318.45	— 18.45	
Nelson Pediatric Free Beds.....		650.00b	650.00	529.80	120.20	
Furnishing Nurses' Home.....		12.50b	12.50		12.50	
Mrs. J. A. Sinclair Gift to Dept. of Education.....		25.00b	25.00			
T. J. Hoover Gift, Installing Skylight in Aero. Lab.....		100.00b	100.00			
T. M. Williams Gift, Install. Skylight in Aero. Lab.....		50.00b	50.00			
Gift for Expenses of Appointment Secretary.....		1,000.00b	1,000.00	145.86	4.14	Expend. charged direct to fund
American Assn. Research Grant.....		300.00b	300.00		1,000.00	
California Packing Corporation—Study in Botulism.....	1,015.41	16,100.00b	17,115.41	17,931.07	300.00	
Research Fund in Oil Industry.....	5,830.53		5,830.53	1,291.06	— 815.66	
Research Fund in Wood Distillation.....	380.00		880.00	4,539.47	300.00	
N. E. L. A. Insulator Test Fund.....	518.01	500.00b	1,518.01	544.55	35.45	
Dr. Cooper Research Fund.....	1,110.00	1,000.00b	1,110.00	781.46	738.55	
Mrs. L. H. Hoover Binding Fd. Branner Geolog. Col.....		500.00b	500.00	324.50	785.50	
Commonwealth Fund for Investigation of Intellectually Gifted Children of California.....				323.85	176.15	
Dr. A. Barkan Gift for Books on History of Medicine.....		3,000.00b	3,000.00	1,609.14	1,390.86	
Food Research Institute of Leland Stanford Jr. Univ.....		2,000.00b	2,000.00	1,815.53	184.42	
U. S. Social Hygiene Board Fund for Investigation of Moral Development with special reference to the prob- lems of social hygiene.....		25,000.00b	25,000.00	6,025.22	18,974.78	
U. S. Social Hygiene Board Fund for Investigation and demonstration of educational means and measures in Social Hygiene.....		745.42b	745.42	1,327.33	— 582.41	
	\$15,312.04	\$54,417.92	\$69,729.96	1,336.57	— 1,336.57	
Income from Gifts (b).....				\$40,290.60	\$29,439.36	
		\$54,417.92				

245
172

SCHEDULE P—Continued
Income from Restricted Endowment and Special Funds, Contributions for Current Purposes and Scholarships for Year Ended August 31, 1921.

	Unexpended or Unappropriated Aug. 31, '20	Income for Year Ended Aug. 31, '21	Total	Expended for Year Included in Income	Balance Unexpended Aug. 31, '21	Remarks
SCHOLARSHIP						
W. J. Gross Scholarship.....	\$350.00	—	\$350.00	\$150.00	\$150.00	
William Irvin Weaver Scholarship.....		150.00b	150.00	150.00		
Bertha Hyde Braly Scholarship.....	125.00	150.00b	275.00	275.00		
George E. Crothers Scholarship.....		200.00c	400.00	150.00	250.00	
Roble Scholarship.....		200.00b				
Gertrude Gardiner Scholarship.....	66.70	150.00b	150.00	150.00		
Mme. Jeanne Rouiller Scholarship.....	80.00	200.00b	286.70	286.70		
Dorothy Metz Scholarship.....	66.70	160.00b	240.00	240.00		
Ernest A. Love Scholarship.....	50.00	400.00b	466.70	286.70	200.00	
Ira S. Lillick Scholarship.....	500.00	150.00b	200.00	200.00		
Mrs. Ira S. Lillick Scholarship.....	500.00		500.00	500.00		
C. F. Elwell Scholarship for Grad. Stud. Elect. Eng.....	800.00		500.00	500.00	500.00	
Dr. Emmet Rixford Scholarship in Surgery.....		500.00b	500.00	300.00	500.00	
Hiram C. Fisk Scholarship.....		240.00b	240.00	180.00	60.00	
Alumni Regional Scholarship of Gray's Harbor.....		100.00b	100.00	100.00		
Mabel Hyde Cory Scholarship.....		125.00b	125.00	125.00		
	\$2,538.40	\$2,675.00	\$5,213.40	\$3,553.40	\$1,660.00	

Income from Gifts (b)..... \$2,675.00

Adjustment of Prior Years (c).....

SCHEDULE P—Concluded

Income from Restricted Endowment and Special Funds, Contributions for Current Purposes and Scholarships for Year Ended August 31, 1921.

	Unexpended or Unapprop. Aug. 31, '20	Income for Year Ended Aug. 31, '21	Total	Expended for Year Included in Income	Balance Unexpended Aug. 31, '21	Remarks
SUMMARY						
Restricted Endowments	\$9,319.42	\$39,764.67	\$49,084.09	\$33,140.91	\$15,943.18	
Restricted Special Funds		19,166.40	19,166.40	19,166.40		
Hospital	3,241.50	1,877.63	5,219.13	4,648.53	570.60	
Special Contributions	15,312.04	54,417.92	69,729.96	40,290.60	29,439.36	
Scholarships	2,538.40	2,675.00	5,213.40	3,553.40*	1,660.00	
	\$30,411.36	\$118,001.62	\$148,412.98	\$100,799.84	\$47,613.14	Schedule A, pp. 88, 89
Income from Endowments, etc., Appropriated from Income (Schs. B, p. 94, and F, pp. 96, 100)		\$37,908.80		\$2,527.88		Transferred or other disposition indicated
Income from Gifts		57,792.92				
Income from Sales		57.27		4,700.90		Income from Scholarships
Income from Collections		2,242.63		40,077.48		Income from Special Contrib- utions for Current Purposes
				46,493.58		Income from Special Endowment Funds
						Schedules B and F, Included in Income to affect expenditures in complying with provisions of funds
		\$118,001.62		\$100,799.84		

* Total expended for Scholarships, \$4,700.90; Expenditures from Income derived from Scholarship Endowments included under Restricted Endowments and Restricted Special Funds.

SCHEDULE X
Student Loans for the Year Ended August 31, 1921.

	Investment in Fund Aug. 31, '20	Additions to Fund During Yr.	Investment in Fund Aug. 31, '21	Out- standing Loans Aug. 31, '20	Loans Made During 1920-21	Loans Repaid During 1920-21	Uncum- bered Bal. Aug. 31, '21 Available for Loans	No. of Loans Made 1920-21	No. of Loans Repaid 1920-21
Associated Students' Undergraduate Loan Fund	\$250.00		\$250.00	\$175.00		\$100.00	\$175.00		1
William Burton Barber Loan Fund	6,574.80	\$1,800	6,576.60	4,250.00	\$3,105.00	3,005.00	2,326.60	50	45
Horace Davis Loan Fund	1,276.32	430.70B	1,707.52	650.00	200.00	150.00	1,007.52	1	2
Harker Alumnae Assoc. Loan Fund	225.00		225.00				225.00		
Stanford Alumni Assoc. Grad. Loan Fd.	245.00		245.00	215.00		10.00	40.00		
Stanford Alumni Assoc. Undergraduate Loan Fund	520.00		520.00	200.00		200.00	520.00		2
Class of 1903 Loan Fund	100.00		100.00	100.00		100.00	100.00		1
Women's Student Loan Fund	1,452.88	132.80C 7.50A	1,493.18	1,200.20	400.00	236.20	39.18	12	7
Medical Faculty Relief Fund	200.00	6.38	206.38				206.38		
Dean of Men's Loan Fund		654.96A & C	654.96		653.00	331.00	332.96	13	9
	\$10,844.50	\$1,134.14	\$11,978.64	\$6,700.20	\$4,448.00	\$4,132.20	\$5,022.64	76	67

A-Additions from Gifts	\$375.50
B-Additions from Income from Endowment	450.70
C-Additions from Interest Income	45.94
	<hr/> \$1,134.14

APPENDIX I.

GIFTS TO THE UNIVERSITY

GENERAL

- From Mr. Cyril F. Elwell ('07), of London, England, \$500 for the maintenance of the Cyril F. Elwell Scholarship in Electrical Engineering for the academic year 1920-21.
- From Mr. George E. Crothers ('95), of San Francisco, \$400 to maintain the Crothers Law Scholarship for the academic years 1920-21 and 1921-22.
- From Miss Elizabeth M. Braly (ex-'96), of Pasadena, \$275 to maintain the Bertha Hyde Braly ('97) Scholarship for the academic year 1920-21.
- From Mrs. Alice Nagel McDowell ('07), of Los Altos, \$150 to maintain the Roble Club Scholarship for the academic year 1920-21.
- From Mrs. Dorothy Davy Gross ('16), of San Jose, \$300 for the maintenance of the Wilmer J. Gross ('16) Scholarship for the academic years 1920-21 and 1921-22.
- From Miss Gertrude M. Gardiner, of Stanford University, \$200 for the maintenance of the Gertrude M. Gardiner Scholarship for the academic year 1920-21.
- From Mrs. Lillian C. Metz, of Sherman, Texas, \$400 for the Dorothy Metz ('17) Scholarship Fund.
- From Mr. and Mrs. Allan Love, of Prescott, Arizona, \$150 for the maintenance of the Ernest A. Love ('18) Scholarship for the academic year 1920-21.
- From Miss Ray Weaver ('13), of Turlock, \$150 for the maintenance of the William Irvin Weaver ('13) Scholarship for the academic year 1920-21.
- From Professor Payson J. Treat (Ph. D. '10) and Mrs. Jessie McGilvray Treat ('07), of Stanford University, \$120 for a tuition scholarship for the academic year 1920-21.
- From Mme. Jeanne R. Rouiller, of Palo Alto, \$160 to maintain the Marcelle Henriette Rouiller Calley ('16) Scholarship for the academic year 1920-21.
- From Mr. Ira S. Lillick ('97) and Mrs. Lillick, of San Francisco, \$1,000 to establish two scholarships of \$500 each for the academic year 1920-21.
- From Mr. W. D. Fisk, of Green Bay, Wisconsin, \$240 to establish a scholarship in memory of his son, Hiram C. Fisk, ('10), whose name is on the Stanford Honor Roll.
- From Miss Emma Louise Martin ('97) and her sister, of New York City, \$500 a year for four years for the maintenance of the Mabel Hyde Cory ('96) Scholarship, to be awarded to a woman student in history.

- From Stanford Alumni, of Gray's Harbor, Washington, \$300 to establish a regional scholarship.
- From Associated Students, San Mateo Union High School, \$300 to establish a regional scholarship.
- From Dr. Emmet Rixford, of San Francisco, \$500 to establish a Scholarship in Surgery.
- From the Estate of Mr. Edmund C. Converse, \$50,000 for the establishment of the E. C. Converse Scholarship Fund.
- From the Commission for Relief in Belgium, three Fellowships of the value of 10,000 francs, for study in Belgian Universities, during the academic year 1921-22.
- From Mr. Herbert C. Hoover ('95), additional material for the Hoover War Library.
- From Carnegie Corporation, of New York, \$700,000 for the establishment of the Food Research Institute of Stanford University for a period of ten years.
- From the Class of '96, \$10,000 toward the endowment fund.
- From General Education Board, \$300,000 towards an endowment fund of \$1,000,000, plus \$25,000 per year for two years to make increases in professors' salaries possible during the endowment campaign.
- From 1920 Senior Class Endowment Fund, \$275 return from endowment policy taken out by Mr. Robert H. Remington.

BOTANY

Gifts to the Dudley Herbarium were as follows:

- Mr. H. A. Borthwick, 2 specimens of California plants.
- Mr. K. Boynton, 1 specimen of California plant.
- Mr. R. V. Bradshaw, 1 specimen of Oregon plant.
- Mr. L. R. Cody, 2 specimens of California plants.
- Mr. H. F. Copeland, 232 specimens of California plants.
- Miss Helen L. Dale, 36 specimens of California plants.
- Dr. A. Davidson, 1 specimen of California plant.
- Miss Hester Davis, 10 specimens of California plants.
- Mrs. Mary Gates, 1 specimen of California plant.
- Mr. George C. Kimber, 51 specimens of Oregon plants.
- Mrs. H. W. Knox, 1 specimen of California plant.
- Mrs. Adele L. Grout, 25 specimens of California plants.
- Mr. R. E. Hackley, 1 specimen of California plant.
- Miss Anne Hadden, 1 specimen of California plant.
- Dr. A. C. Herre, 7 specimens of California plants.
- Miss Deborah Hichborn, 7 specimens of California plants.
- Mr. P. R. Hichborn, 23 specimens of California plants.
- Mr. E. A. McGregor, 10 specimens of California plants.
- Mr. G. H. Mallory, 34 specimens of Colorado plants; 22 specimens of California plants.

- Mr. S. B. Parish, 3 specimens of California plants.
Mr. E. H. Quayle, 2 specimens of California plants.
Mr. George L. Moxley, 1 specimen of California plant.
Mr. Charles Richter, 10 specimens of California plants.
Mr. C. P. Smith, 138 specimens of plants from the Atlantic states.
Mr. E. R. Weston, 1 specimen of California plant.
Mr. S. N. Wychoff, 1 specimen of California plant.
-

CHEMISTRY

- From the Sperry Flour Company, \$750 for the maintenance of the Sperry Fellowship for the academic year 1920-21.
From Dr. William Freeman Snow ('96), \$300 for departmental needs.
-

EDUCATION

- From Estate of Dr. C. Annette Buckel, property in Oakland for the permanent support of the Buckel Fellowship.
From Professor E. P. Cubberley, of Stanford University, \$250, the second instalment in the maintenance of the research fellowship in problems relating to school administration.
From Professor L. M. Terman, of Stanford University, \$250, the second instalment in the maintenance of the research fellowship in the study of psychological and educational problems relating to gifted children.
From Mrs. J. A. Sinclair, of San Francisco, \$25 for Dr. Terman's work.
From The Commonwealth Fund, \$20,300 for the study of gifted children.
From U. S. Interdepartmental Social Hygiene Board, \$20,000 for the support of two researches: (1) Social hygiene. (2) Discovery and demonstration of more effective educational measures in prevention of venereal diseases.
-

ELECTRICAL ENGINEERING

- From the National Electric Light Association, \$1,000 to meet the cost of cyclic temperature durability tests of transmission line insulators.
-

GEOLOGY

- From Mrs. Lou Henry Hoover ('98), \$500 for binding certain sets and odd volumes in the Branner Geological Collection.
The Taylor collection of recent shells, comprising about 5,500 species.
-

HISTORY

- From Viscount Shibusawa and other Japanese donors, a fund of \$37,500 to establish a chair in Japanese History and Civilization.

HOPKINS MARINE STATION

From Dr. Thomas Hunt Morgan, of Columbia University, \$100 for the library fund.

LIBRARY

From Professor William F. Durand, of Stanford University, the war files of the U. S. Research Information Service in Paris, containing confidential reports of the scientific work of the Allied Governments.

From the French Foreign Office, through Consul General J. Neltner, of San Francisco, 146 volumes relating to the history and literature of France.

From Mr. and Mrs. F. E. Booth (Grace Davis, ex-'96), of San Francisco, collection of Belgian War posters.

MECHANICAL ENGINEERING

From Professor Theodore J. Hoover ('01), of Stanford University, \$100 for changes in the Aerodynamics Laboratory.

From Dr. Thomas M. Williams ('97), of Palo Alto, \$50 for changes in the Aerodynamics Laboratory.

MEDICAL SCHOOL

From the Estate of David Hewes, \$6,000 to establish the "David Hewes Free Bed" in Lane Hospital.

From the National Canners' Association, \$16,100 for the further study of botulism under the direction of Dr. E. C. Dickson.

From Dr. Adolph Barkan, seventy-five books on the history of medicine.

From U. S. Interdepartmental Social Hygiene Board, two gifts: (1) \$385 for continuation of research "Permeability of meninges to anti-syphilitic drugs." (2) \$1,200 for the discovery of more effective medical measures for the prevention and treatment of venereal diseases.

From Mrs. Andrew William Hoisholt, a large oil painting, and four hundred volumes on psychiatry.

From the Estate of Charles N. Felton, Jr., legacy to be known as "The Kate Ashley Loomis Fund," to be used in Lane Hospital for treatment of patients who are unable to pay for same.

From Dr. Adolph Barkan, \$1,000 per year for three years for purchase of books dealing with the history of medicine.

MINING AND METALLURGY

From Mrs. Lou Henry Hoover ('98), of Stanford University, \$600 for maintenance of the Lou Henry Hoover Fellowship in Mining for the academic year 1920-21.

From Professor Theodore J. Hoover ('01), of Stanford University, \$600 to maintain the Theodore J. Hoover Fellowship in Mining for the academic year 1920-21.

From the Pacific Coast Steel Company, \$500 for research in wood distillation.

ZOOLOGY

ENTOMOLOGY AND BIONOMICS

From Dr. Vernon L. Kellogg, of Washington, D. C., collection of reprints and miscellaneous entomological pamphlets and papers, several thousand in number.

MUSEUM

From Mrs. Dorothy Hume Reeves (ex-'17), of Fort Worth, Texas, a large oil painting of A Roman Bull-Fight.

APPOINTMENT SECRETARY'S OFFICE

Anonymous gift of \$1,000, to pay the expenses during the academic year 1921-22 in connection with the handling of employment of students.

DEAN OF MEN'S LOAN FUND

Anonymous gift of \$500.

From Mrs. M. H. Whittier, of Beverley Hills, \$100.

APPENDIX II.

DEPARTMENTAL REPORTS

ANATOMY

The faculty of the Department of Anatomy for 1920-21 consisted of Professors Frank Mace McFarland and Arthur William Meyer; Associate Professor Clara Stoltenberg and Assistant Professor Edgar Davidson Congdon. Assistance in laboratory instruction in histology was given by Mr. Percy Vernon Thompson during the fall and winter, and by Mr. Reo B. Armitstead during the spring quarter. Mr. Thompson assisted also in osteology during the winter quarter.

The following articles and investigations by the staff were completed during the year:

McFarland, Frank Mace: A morphological study of the genus *Hancockia*.
Meyer, Arthur William:

- Cystic omenta, kidneys and livers in identical twins. In publication.
- Some observations upon the human urinary bladder. In publication.
- Further observations upon use-destruction in joints. In publication.
- and Mall, Franklin P.: Studies upon abortuses. Carnegie Institution, Washington, D. C. In publication.

In addition to the above investigations and publications, the following investigations were undertaken by students:

- Clark, Esther B.: Atypical ova in the guinea pig.
- Cody, B. A.: Atypical spermatozoa in the guinea pig.
- The locus of implantation in the guinea pig.
- Kinney, Paul B.: Internal migration of the ovum in the guinea pig.
- Lund, Henry J.: Early tissue reactions and changes in transplanted bone in the rabbit.
- Martini, Iride E.: A regional study of the structure of the articular cartilages.
- Nesbit, R. M.: The structure of the human auditory ossicles.
- Thompson, Percy Vernon: Early changes and reactions in transplanted cartilages in the rabbit.
- Wood, Granville M.: The function and regeneration of the seminal vesicles in the guinea pig.

ARTHUR WILLIAM MEYER,
Professor of Anatomy.

APPLIED MATHEMATICS

The faculty of the department during the year consisted of Professors Leander Miller Hoskins, Halcott Cadwalader Moreno, and Sidney Dean Townley; Associate Professor William Albert Manning; and Instructor Heinrich Wilhelm Brinkmann. During the autumn and winter quarters classes were conducted by Teaching Assistants Leo Gregory Gianini and Pedro I. Aguerrevere.

The major part of the work of the department has of necessity been devoted to the courses in mathematics which form a required part of the preparation of all students of engineering. This required work is given in five-unit courses, running for six quarters. The sharp increase in attendance which marked the recovery from war conditions was felt in full proportion in these courses, necessitating a considerable increase in the number of class sections to be provided for. In 1918-19 the policy was tentatively adopted of repeating the first part of this work so that students could enter on the prescribed program at the beginning of the winter quarter as well as in the autumn. In response to a continuing demand this policy has been continued and extended, so that during the year 1920-21 five of the six quarters of required engineering mathematics have been repeated. The extent of the demand for this repetition is indicated by the fact that about one-third as many students began this work in the winter as in the autumn.

This year for the first time there appeared to be some demand for first- and second-year courses in applied mathematics during the summer quarter. Accordingly sections were formed in courses 1a, 2a and 2b, with enrolment of 38, 14 and 12 respectively. Whether this summer work should be offered regularly in the future is at present uncertain, since the summer registration was doubtless materially increased this year by temporary causes.

While the efficient conduct of the prescribed engineering courses has of necessity absorbed the greater part of the energies of the teaching force, the department has also given elective courses in engineering mathematics and in practical astronomy adapted to the needs of special classes of engineering students, as well as courses in astronomy of a more general interest. Members of the department have also been able to devote a limited amount of time and energy to investigative work in addition to the required elementary teaching.

LEANDER MILLER HOSKINS,
Professor of Applied Mathematics.

BACTERIOLOGY AND EXPERIMENTAL PATHOLOGY

The teaching staff for the academic year 1920-21 included the following: Assistant Professors Edwin William Schultz and William Ludlow Holman, and Teaching Assistants H. W. Fritzschen, E. M. Hall, and Anna Franklin. Professor Manwaring was absent on sabbatical leave.

The following researches were conducted in this department during the current year:

W. L. Holman and Doris E. Anderson: Studies on bacterial reactions with iron and lead salts.

W. L. Holman and Edith A. Patterson: Studies on the hydrogen-ion concentration of edematous fluid in *B. welchii* infections.

E. W. Schultz, Alberta Marx, and H. J. Beaver: The relationship between the hydrogen-ion concentration and bacterial counts of commercial milk.

E. W. Schultz and H. V. Baker: On repair of the liver in dogs following the injection of chloroform into the mesenteric vein.

E. W. Schultz and H. S. Trueman: A comparison of the effects on the liver of chloroform and equivalent amounts of hydrochloric acid injected into the mesenteric vein (Studies on Graham's theory of chloroform necrosis of the liver).

Professor Manwaring during his sabbatical leave delivered a course of lectures (by invitation) on functional pathology at the Washington University School of Medicine, St. Louis, Mo.

EDWIN WILLIAM SCHULTZ,
Acting Executive.

BOTANY

The teaching staff for the academic year 1920-21 included the following: Professor Douglas Houghton Campbell, Associate Professors Leroy Abrams and Leonas Lancelot Burlingame, Assistant Professor James Ira Wilson McMurphy, and Mr. L. G. M. Baas-Becking, Instructor. Professor George James Peirce was away during the fall, winter and spring quarters. Mr. Becking and Mr. Herbert Mason acted as assistants in Botany during three quarters, and Mr. O. L. Sponsler during the summer quarter. The usual number of courses have been given and a considerable amount of advanced work has been done and prepared for publication.

Professor Campbell during the year devoted the greater part of his time to a study of some very interesting material furnished by Dr. H. L. Lyon of Honolulu. Two papers based on this material, dealing with two species of ferns (*Botrychium*) have been completed, the first appearing in the April number of *Annals of Botany*. The second one is now ready for publication.

Professor Peirce was occupied during his absence in the preparation of a book on the physiology of plants and made studies in connection with this at the libraries and laboratories of Harvard University.

Associate Professor Abrams has continued his work on the preparation of an illustrated flora of the Pacific states, the first volume of which is in press.

Associate Professor Burlingame has continued his investigations of the inheritance of flower color in *Clarkia* and *Lupinus*. The results of the latter are now in press (*American Naturalist*) and a preliminary account of the genetics of five color types of *Clarkia* was presented before the summer meeting of the Western Society of Naturalists, and will shortly appear in print.

Assistant Professor McMurphy has continued his studies of fungi and plant disease and has added a few specimens to the collection. He has prepared eighty-nine microscopic slides from fungi in the Harkness collection. The common fruits, vegetables, cereals, and many other plants have been grown in the experimental garden and have furnished material for Biology and for various courses in Botany.

Mr. Baas-Becking has investigated certain tropical or sub-tropical ferns and his thesis for the Doctor's degree, which was granted in June, was entitled "The Eusporangiate Ferns and the Stelar Theory." This has appeared in the American Journal of Botany.

Mr. O. L. Sponsler has applied X-ray photography to a study of the structure of starch grains and seems likely to make therefrom the first important contribution to our knowledge of the structure of this extremely important plant product that has been made in more than a quarter of a century. He is pursuing his experimental work and will make it the subject of his doctor's thesis to be presented next year.

Mrs. Roxana S. Ferris, herbarium assistant, has undertaken a critical study of the flora of the Santa Cruz Peninsula. During last summer she made extensive botanical explorations in New Mexico and Texas.

Miss Hester Davis, under the instruction of Professor Burlingame, has studied the cytology of species of *Crepis* and of *Clarkia elegans*, the results of which are not yet sufficiently advanced for publication.

The Dudley Herbarium has been the recipient of gifts from 25 former students and friends. These gifts total 609 specimens. The mounted collections of the herbarium have been increased by 9,561 sheets, and now total 113,394 sheets, exclusive of the cryptogamic collection.

The Arboretum has received two notable gifts. The Division of Foreign Seed and Plant Introduction of the United States Department of Agriculture presented 35 specimens of trees and shrubs, and Mr. John McLaren, Superintendent of Golden Gate Park, San Francisco, 97 species. These plants are of unusual interest, as many of them are of recent introduction into America.

Professor Abrams collected seeds and native trees and shrubs in the inner coast ranges and the southern Sierra Nevadas which are now being propagated in the nurseries.

A comprehensive planting plan for the entire Arboretum was undertaken under the general supervision of Mr. John McLaren. It is hoped this will be completed during the coming year.

Professor Campbell expects to spend several months of the coming year in Austral-Asia, continuing his studies in the distribution of the Pacific flora, especially in relation to plants in Hawaii.

It may be pointed out that the work of the department of Botany is somewhat more diversified than might at first be expected. In addition to the usual lecture and laboratory courses, one of the most important collections of flowering plants in this country is maintained under the name of the Dudley Herbarium. The Herbarium also contains a unique collection of fungi, and there are many specimens in the possession of the department or

of its personnel of plants from all parts of the world. The maintenance and increase of this collection constitutes a very important contribution and duty of the University to American scholarship.

Owing to extremely favorable climatic conditions and the availability of land suitable for the purpose, an experimental garden has been in operation on a very modest scale, in which experimental work on the breeding of plants, and the principles of heredity is being carried on with promise of great fruitfulness. In another part of this experimental garden, nearly all the plant diseases common to this region are grown, so that students and others can see these in their natural conditions, can see them producing their results and can observe or learn the methods of prevention, treatment and cure. Physiological work of considerable variety is being carried on both out of doors and in the laboratory, to a greater extent out of doors than is possible in most universities in this country because of the favorable conditions above mentioned.

GEORGE JAMES PEIRCE,

Professor of Botany and Plant Physiology.

CHEMISTRY

The instructing staff consisted of Professors Robert Eckles Swain, Lionel Remond Lenox, Edward Curtis Franklin, Stewart Woodford Young, and John Pearce Mitchell; Assistant Professor William Henry Sloan; Instructors Florian Anton Cajori, John Frederick Gross Hicks, George Sutton Parks, and Norris Watson Rakestraw; and William Richmond Barber, Marguerite Eiskamp, Milan Wayne Garrett, and Alanson Wood McDermoth, Teaching Fellows.

Julius Stieglitz, Professor of Chemistry at the University of Chicago, was under appointment as Acting Professor for the summer quarter. In addition to a course in elementary organic chemistry, Professor Stieglitz offered an advanced course in this field, dealing especially with the electron theory as applied to organic compounds, and with the chemistry of dyes and the newer synthetic drugs.

The Sperry Flour Company Fellowship in Chemistry was held by Mr. Robert John Cross; the John Maxson Stillman Scholarship by Mr. Alan Campbell Richardson; and the William Irvin Weaver Scholarship by Mr. Edwin Lysle Gustus for the autumn and winter quarters, and by Mr. Earle Frank Demond for the spring quarter.

During the present academic year Professor Emeritus John Maxson Stillman completed a book, published by the Open Court Publishing Company, on Theophrastus Bombastus von Hohenheim—called Paracelsus—dealing with his personality and influence as physician, chemist, and reformer; and has pursued his studies in the early history of chemical science and arts. It is a pleasure to note that with the close of this academic year Professor Stillman will have completed thirty years of association with the work of this department, twenty-six years as its executive head, and four years as professor emeritus. It has been a matter of the utmost satisfac-

tion to this staff that, in spite of his retirement from active service, he has been able to continue his scholarly work in the history of chemistry and to leave unbroken a friendly and helpful association with the staff and students of the department which can not be too highly prized by them.

Professor Lenox and Miss A. R. Berger have continued the work they have had in progress for several years past on special methods in chemical analysis.

Professor Franklin has completed for publication work of research on the ammono carbonic acids; on the mixed aquo ammono, thio ammono, and aquo thio ammono carbonic acids; and on ammono carbonous acid. A preliminary report on this work was made before the general session of the American Chemical Society at Rochester last April. He has investigations in progress with Mr. F. W. Bergstrom as a doctorate thesis, on the action of potassium amide on salts of iron, molybdenum, and tungsten; with Mr. M. W. Garrett on the ammono compounds of uranium; with Miss Marguerite Eiskamp on the salts of naphthalene sulfonitramide; with Miss Adelaide Jameson on salts of nitro urea; with Mr. P. V. Peterson on the action of fused sodium amide on silicates; and with Mr. H. B. Reilly on the preparation of carbon tetrafluoride.

Professor Franklin has served during the year as a Councillor-at-Large, and as a member of the Priestly Memorial Committee, of the American Chemical Society, and as a member of the Executive Committee of the Pacific Division of the American Association for the Advancement of Science.

Professor Young has had in progress during the year work of research with Miss I. P. Baughman, as a doctorate thesis, on the mutual flocculation of tannin and gelatine; with Mr. W. R. Barber on the formation of permanganate from manganese dioxide; with Mr. A. C. Richardson on the rate of heat penetration in steam cooking; with Mr. E. F. Demond on vapor pressures in casing head gasoline; with Mr. H. P. Smith on breaking oil emulsions; with Mr. Harvey Newland on the flocculation of gold sols; with Mr. C. E. White on the passive state of zinc; with Mr. P. S. Williams on the passive state of tin; with Messrs. L. A. Bunds and C. C. Bunds on the cracking of petroleum; with Messrs. M. M. Rhodes and C. W. Starkey on tension in electrodes; and with Messrs. L. H. Cook and Duncan Stewart on electrical conductivity as an indicator of boiler water contamination.

Professor Swain, in collaboration with Instructor Rakestraw, continued the study of the effects of fatigue on the composition of the blood in human subjects; and completed work of research with Mr. R. J. Cross, under the grant of the Sperry Flour Company Fellowship, on the amino acid content of wheat proteins; with Miss H. W. Severy on the occurrence of copper and zinc in the tissues of marine animals; with Mr. W. S. Clark on the quantitative estimation of allantoin; with Instructor Rakestraw, and Messrs. T. P. Hughes and W. S. Cary on the chemical composition of the blood, milk, and other body fluids of the sea-lion; with Miss A. Cook on the composition of the ash of the tissues of marine, as compared with land mammals; and with Mr. A. W. McDermoth on the effect of changes in hydrogen-ion concentration on the absorption of potassium by soils.

Professor Swain served as a member of the Advisory Board of the World Metric Standardization Movement; of the Metric System Committee, and the Committee on Educational Problems, of the American Chemical Society; and completed an investigation of the methods and results of operation of the smelters of the Salt Lake Valley, as Commissioner of the U. S. Federal Court. It is believed that the conditions laid down to govern future operation will make it possible for these smelters to operate with unrestricted output without further injury to the plant and animal life of the district.

Instructor Cajori has continued his studies on the nutritive value of the proteins of the pecan nut and their hydrolytic products; and during the spring quarter was engaged in research work on the metabolism of phosphorus compounds in diabetes in the Memorial Laboratory and Clinic at Santa Barbara.

Instructor Hicks made a study of certain reactions in fused salt media; with Mr. W. A. Craig investigated solvolysis in fused salt media; and with Messrs. K. S. Boynton and V. Langford made an investigation of the electrolytic production of magnesium from the residues of salt works with particular reference to large scale production.

Instructor Parks has begun an extended investigation of the specific heats and other thermal properties of a number of organic compounds. The data obtained will help to explain the thermal behavior of super-cooled liquids and furnish a basis for the calculation of the free energy of these compounds.

Instructor Rakestraw has continued his work on the chemical factors in fatigue; with Miss D. E. Bernard has made a study of the cholesterol content of the blood in fatigue; and with Miss A. C. Anderson a study of changes in blood volume in fatigue.

The Sperry Flour Company Fellowship, with an honorarium of \$750.00, was renewed for this year. Dr. William Freeman Snow (A. B. Chemistry, 1896) made another generous contribution of \$300.00 to the funds of the department to be expended for any purpose to which the department may choose to apply it. Acknowledgment should also be made of a gift of forty pounds of choice pecans from Mr. Chas. J. Moore of San Antonio, Tex., for the use of Dr. Cajori in his studies on their nutritive properties.

I wish particularly to note the very satisfactory results of the work of this summer quarter, especially from the standpoint of the large enrolment, and the good grade of work done in advanced classes. The record appears fully to justify the efforts made to strengthen the work of this quarter. The total enrolment in all classes for the quarter was 345. The enrolment of major students in Chemistry for the quarter was 59, of whom 22 were in graduate standing.

ROBERT ECKLES SWAIN,
Professor of Chemistry.

CIVIL ENGINEERING

The work of the department of Civil Engineering during the past year has been carried out as outlined in the Announcement of Courses. The

instruction was given by Professors Marx, Wing, and Fish, and Assistant Professors Moser, Thomas, Cutter, and a corps of student assistants.

The increase in students in Mechanical Engineering will call for the appointment of additional assistance next year to help out in the courses of Applied Mechanics and Hydraulics, and a recommendation to that effect will be made at the proper time.

CHARLES DAVID MARX,
Professor of Civil Engineering.

ECONOMICS

During the year instruction in Economics was given by Murray Shipley Wildman, Albert Conser Whitaker, Walter Greenwood Beach, Eliot Jones, professors; Eliot Grinnell Mears, acting professor; John Bennet Canning, assistant professor; Margaret Mulford Lothrop, Nathaniel Sanders, instructors; Francis W. Hirst, lecturer; Lucy Burton Winsor, Charles Hickman Titus, assistants in instruction.

The beginning of the year was marked by the inauguration of the Lower Division which involved important changes in the published program of this department and in the teaching staff. Most important of these was the permanent appointment of Professor Beach. His work has been the development of the Lower Division course in the problems of citizenship and in an enlargement of opportunity for advanced students in sociology.

Eliot Jones was promoted to the rank of Professor of Economics. During the year he completed and published through Macmillan's press "The Trust Problem in the United States."

As no permanent appointment has been made in the field of trade and commerce, an invitation was extended to Mr. Eliot G. Mears, who had just returned from Athens and Constantinople in the service of the United States Bureau of Foreign and Domestic Commerce. Mr. Mears gave courses in national resources, marketing and trade during the winter and spring quarters.

During the second term of the summer quarter Mr. Francis W. Hirst of London gave a course on the Economic and Financial Conditions in Europe after the War.

During the year there was a gratifying increase in the number of students doing graduate work in Economics. Opportunity to use the Hoover Collection of war material will render this the best place in the country for those who desire to work in the economic phases of war and reconstruction.

It is hoped that a further impetus to graduate work may come from the presence of material soon to be collected by the Food Research Institute.

MURRAY SHIPLEY WILDMAN,
Professor of Economics.

EDUCATION

During the year 1920-21 instruction was given by Ellwood Patterson Cubberley and Lewis Madison Terman, professors; Truman Lee Kelley,

acting professor; Percy Erwin Davidson, associate professor; William Martin Proctor, assistant professor; and Marvin Lloyd Darsie, instructor. During the summer quarter additional instruction was given by William Webb Kemp, President of the State Teachers' College at San Jose, as acting professor; Raymond Holder Wheeler, Professor of Psychology at the University of Oregon; J. Harold Williams, editor of the *Journal of Delinquency* and director of the California Bureau of Juvenile Research, and Ben D. Wood, assistant to the Dean of Columbia College, as acting assistant professors; and Will Christopher Wood, Superintendent of Public Instruction for California, and Edwin Reagon Snyder, Commissioner of Vocational Education, as special lecturers.

Associate Professor Jesse Brundage Sears was absent on sabbatical leave during 1920-21, and spent the year as acting professor of education at the University of Minnesota. Effective at the close of the year, Assistant Professor William Martin Proctor was promoted from the rank of assistant professor to that of associate professor, Associate Professor Sears to that of full professor, and Acting Professor Kelley to that of full professor.

During the year Ethel Dorothy Whitmire served as fellow on the Buckle Foundation, Walter Lewis Bachrodt as teaching fellow in school administration, and Jessie M. Chase as research fellow for the study of exceptional children.

During the year two volumes by Professor Cubberley were issued, a "History of Education," and "Readings in the History of Education," which represented much work in teaching and selection of materials as well as research. During the year Professor Cubberley made two trips east. The first, in March, was to assist at a three-day conference on problems in school administration at the University of Michigan, and to attend a meeting of the Advisory Committee on Educational Research of the Commonwealth Fund of New York, of which he is a member, to pass on proposals for grants in aid of research. At this meeting a grant of \$20,300 was made to Stanford University for a study of superior children, this to be under the direction of Professor Terman. The second trip was in August, to attend a meeting of a committee appointed to draw up a plan for the conduct of a national school finance inquiry, to be financed jointly by The Commonwealth Fund, the Rockefeller Foundation, the Carnegie Corporation, and the Milbank Fund, all of New York.

During the year Professor Terman prepared for the National Education Association a monograph on the use of intelligence tests in school reorganization, and supervised a number of researches in mental development and intelligence tests which will appear later in various publications. Collection of data on gifted children was continued, and an enlarged investigation in this field, made possible by the grant of \$20,300 from the Commonwealth Fund, of New York City, was inaugurated. This work will be carried on during 1921-22, and will be mentioned more in detail next year. The work was begun during the summer quarter, Miss Florence Fuller, Miss Florence Goodenough, Miss Helen Marshall, and Dr. Dorothy Yates being added to the staff as full-time research assistants, to carry on

the field work. After a month of special training, given in August, they began field work in the location and study of 1000 of the most gifted children of California. Follow-up work with these children will be continued as far as possible into adult life. Mr. G. M. Ruch was appointed as resident research assistant for the investigation, and Professor Kelley as statistical adviser.

Work was also launched during the year on two investigations, financed in part by two grants of \$10,000 each from the United States Interdepartmental Social Hygiene Board. One of these is being carried out under the joint direction of Stanford University and the California State Bureau of Juvenile Research, Professors Terman and Kelley representing the University, and Dr. J. Harold Williams the California State Bureau. Mr. Vernon L. Cady is acting as research assistant in this investigation. The second of these investigations is being carried on under the joint direction of Stanford University, the State Teachers Colleges, the State Department of Education, and the University of California Training School for secondary teachers. Professor Terman is chairman of the committee in charge, and Mrs. Bertha Chapman Cady represents the University as special investigator to coöperate with the Teachers Colleges of the state in the improvement of hygiene teaching.

During the year Professor Terman made two trips east in connection with the work of various scientific organizations. He is president of the Western Psychological Association, and is a member of the Division of Anthropology and Psychology of the National Research Council, of the Committee on National Intelligence Tests, and of the Council of the American Psychological Corporation, and in this capacity will organize and head its Pacific Coast branch. He was also made associate editor of the *Journal of Educational Psychology*, and continues on the editorial staff of the *Journal of Applied Psychology*, the *Journal of Educational Research*, and the *Journal of Juvenile Delinquency*.

Professor Proctor brought out during the year a monograph on "Psychological Tests and Guidance of High School Pupils". During the month of February he made a trip east, speaking on the subject of mental tests in vocational guidance at the meeting of the Middle West Vocational Education Association, in Minneapolis, and at the National Vocational Guidance Association meeting at Atlantic City. He was elected a director of the National Vocational Guidance Association, and appointed a member of the advisory committee on vocational guidance of the Bureau of Child Welfare. In May Professor Proctor was elected President of the California Vocational Guidance Society.

As co-ordinator of the Federal Board for Vocational Education, Professor Proctor has had charge of from one hundred to one hundred and twenty-five ex-service men who are being trained at Stanford by the Government for the professions of law, medicine, engineering, education, journalism, and business. In spite of their physical handicaps, these men have maintained scholarship records above the average for men in the University. The ability of men of good intelligence, steadfastness of pur-

pose and maturity, who lack high school preparation, to do University work satisfactorily has been clearly demonstrated. During the academic year 1920-21 the Government paid to men in training under the Federal Board at Stanford the sum of \$139,500 in maintenance allowances; \$32,000 for fees and tuitions, and \$8500 for books and supplies. Professor Proctor has assisted 43 Stanford men to secure vocational training.

During the year 1920-21 Professor Truman Lee Kelley, of Teachers College, Columbia University, was given leave by that institution to come to Stanford for the year as Acting Professor, and, at the end of the year, resigned his professorship at Columbia to accept appointment as professor of education at Stanford. During the year he prepared and the University published a monograph entitled, "Chart to Facilitate the Calculation of Partial Coefficients of Correlation and Regression Equations", and also completed a text book on "Social and Educational Statistics", which is to appear during the coming year.

During Professor Sears' absence at the University of Minnesota he conducted a "Survey of the Schools of Arlington, Minnesota", which has been published by the University of Minnesota. He acted as one of the representatives of Stanford at the installation of President Coffman, and has been a speaker at a number of educational meetings in the east. He also taught in the summer session of the University of Minnesota, and during August was, for three weeks, a special lecturer at the State Normal School at Bellingham, Washington. He has been retained, for the autumn quarter of 1921-22, as a special assistant to President Coffman in making a financial and educational study of the University.

During the year 1920-21 graduate students in Education were granted 17 of the 65 degrees of Master of Arts conferred by the University. Of the 17, but 7 had received the A. B. degree here, and 9 of the remaining 10 had come from outside California to Stanford for graduate study.

The summer quarter of 1921 was the largest and most satisfactory, from the point of work and students in Education, of any so far held, as may be seen from the following comparative table:

	1920	1921
TOTAL STUDENTS REGISTERED IN EDUCATION		
(Not including Graphic Arts).....	101	142
Of these,		
held A. B. degree	54	65
held A. M. degree	9	16

The increase in students of graduate grade, who come for advanced work in Education, is gratifying.

Another noteworthy feature of the summer quarter work during 1921 was the institution of special courses in physical training for teachers. The attendance was satisfactory as a beginning, and the work offered was distinctly worth while.

ELLWOOD PATTERSON CUBBERLEY,
Professor of Education
and Dean of the School of Education.

DIVISION OF GRAPHIC ART

The teaching staff in Graphic Art consisted of: Arthur Bridgman Clark, professor; Chloe Lesley Starks, assistant professor; and Emil Grebs, lecturer.

For three years the Division gave courses during the summer quarters, which were well attended and worth while, but it has reluctantly decided to discontinue them because they necessitate too great a sacrifice in the quality of work offered during the first three quarters.

Mr. Grebs, manager of the art department of the firm of Foster and Kleiser in San Francisco, has given a two quarter course in commercial art. The class has been in charge of a student teacher during five days of the week, and has had the direction and advice of Mr. Grebs one day a week, the usual method of instruction in art schools.

Mr. A. Phimister Proctor, a sculptor of national repute, has established his working studio on the campus. This is a noteworthy inspiration to the art lovers of the community.

The Division is just completing a large size demonstration room for the study of draperies and color in interior decoration.

Mr. Clark published in January, through the Stanford University Press: "Art Principles in House, Furniture and Village Building." He has also, when called upon by the State Board of Education and otherwise, been active through lectures and in conference in developing a state policy of art instruction in the public schools.

ARTHUR BRIDGMAN CLARK,
Professor of Education,
Division of Graphic Art.

ELECTRICAL ENGINEERING

The departmental faculty was constituted as follows:

Harris Joseph Ryan, professor; James Cameron Clark, associate professor; Henry Harrison Henline, assistant professor.

The department was overwhelmed with duty during the year. Registration in all classes averaged an increase of 38% as may be seen in the following table of student-units of instruction given by the department during the last seven years:

Year	1920-21	1919-20	1918-19	1917-18	1916-17	1915-16	1914-15
Student-units.....	1097	792	260	412	735	801	810

In most of the physical and chemical industries and sciences the application of electrical methods is increasing at a high rate. This is made possible largely thru the electroscience exchange that has grown up in recent years by the cooperation and publications of many in the industries, professions and sciences. It is the duty of the personnel of this department to develop knowledge of all fundamentals in applied electroscience and, as far as practicable, to communicate such knowledge to those who need it for the new electrical methods that they may have to develop or difficulties to overcome. Work of this character was accomplished during the year as follows:

1. Problem of the Reinsulation of the 150,000 volt, 241 mile. power transmission line for the employment of 220,000 volts by the Southern California Edison Co., represented by

Mr. H. A. Barre, Executive engineer (U of Calif)

Mr. R. J. C. Wood and (London)

Mr. Harold Michener, Engineers (U of Calif.)

In Stanford high voltage laboratory approximately 160 hours.

2. Problem of the Insulation of the 220,000 Volt Circuits for the Transmission of Power in the Pitt River project of the Pacific Gas and Electric Company, represented by:

Mr. F. G. Baum, Consulting Engineer (Stanford)

Mr. A. E. Crellin, Mr. Baum's Asst. Eng. "

and the following electrical engineers of the engineering department of the company:

Mr. J. P. Jollyman (Stanford)

Mr. Joseph Mini "

Mr. R. Wilkins (Kansas)

In Stanford high voltage laboratory approximately 100 hours.

In the foregoing studies Stanford was represented by Professor Ryan with the aid of Assistant Professor Henline and Mr. F. F. Evenson, graduate student.

3. Problem of the Isolation of the Daily-Temperature-Cycle Factor in the durability of suspension insulators for the support of high voltage power transmission lines; originating in the Insulator Committee of the Technical Division of the National Electric Light Association, Mr. John A. Koontz, (Stanford) Chairman. This study was directed by the department and carried on by Mr. Raymond Lewelling, 1920-'21 Elwell graduate scholar and financed from a fund of \$2,000 given for the purpose by the Association.

4. Problem of 200,000 volt Insulation for the Stanford Medical Department's New X-Ray Laboratory:

I. Insulation of Conductors

II. Insulation of X-Ray Tube Electrodes

originating thru Dr. W. Edward Chamberlain, in charge of X-Ray Laboratory.

5. Losses of Power thru the Atmosphere by "Corona" from Large "Rope Laid" Copper Cable to be used for 220,000 volt Power Transmission of the Pitt River Project of the Pacific Gas and Electric Company. Study made by Associate Professor Clark assisted by Mr. E. A. Crellin of Mr. Baum's office and Mr. F. E. Terman, graduate student. In high voltage laboratory approximately 150 hours.

7. Paper on Flash-over Characteristics of Long Suspension Insulators by H. J. Ryan, H. H. Henline and F. F. Evenson presented and discussed at the meetings of the Los Angeles and San Francisco Sections of the American Institute of Electrical Engineers on April 19 and May 24, respectively.

8. Development of a Transient Meter for the measurement of voltage and current crests of extremely short duration (i. e., .000,000, 2 second or of any

longer duration) to be employed subsequently in the study of the origin and character of "unaccounted for" flash-over voltages on long transmissions in large power networks.

9. Visits of engineers and technicians from far and near for the interchange of knowledge of fundamentals in applied electroscience. (The number registered from January 1 to September 1, 1921 was 96). Approximately 250 faculty-man-hours were applied hereto.

HARRIS JOSEPH RYAN

Professor of Electrical Engineering.

ENGLISH

The staff of this department for the year 1920-21 consisted of Raymond Macdonald Alden,⁴ Lee Emerson Bassett,⁴ William Herbert Carruth,² John S. P. Tatlock,¹ professors; William Dinsmore Briggs,^{1,4} Henry David Gray,⁴ Samuel Swayze Seward,⁴ associate professors; Howard Judson Hall,^{3,4} Arthur Garfield Kennedy,⁴ Frances Theresa Russell, Everett Wallace Smith,⁴ assistant professors; Paul Hibbert Clyde,⁴ Gordon Arthur Davis,⁴ A. Donald Douglas,⁴ Miller L. McClintock,¹ Edith Ronald Mirrieles,^{1,2} instructors; Genevieve Apgar, Claire Soule Seay, assistants in instruction. The superior numbers indicate quarters of absence on vacation or on special leave. Miss Margery Bailey and Miss Elisabeth Buckingham were on leave of absence for the year, pursuing advanced studies, Miss Bailey at Yale and Miss Buckingham at Columbia University. Professors Charles Grosvenor Osgood and Robert Kilburn Root of Princeton University served as acting professors for the first and second terms, respectively, of the summer quarter.

Assistant Professor E. W. Smith was promoted to an associate professorship, and Miss Buckingham and Miss Mirrieles were promoted to assistant professorships.

At the end of the autumn quarter the health of Professor Carruth, to the regret of every member of the department, led him to retire from service as executive head of the department.

The number of major students enrolled in the department was 151, of whom 33 were graduates. Thirty-two students were recommended for the degree of A. B. (six of them in the Division of Journalism); 13 for the degree of A. M. Candidates for the Master's degree presented acceptable theses as follows: Miss Genevieve Apgar, "Morris's 'The Lady of the Land,'"; Willard H. Bonner, "The effect of the Great War upon journalistic vocabulary"; Peter O. Bruland, "A comparison of the vocabulary of the two Wycliffite Versions of the First One Hundred Psalms"; Miss Ellen M. Dodson, "Modernizations of Chaucer's Canterbury Tales"; Miss Cora L. Hocker, "The idealist in contemporary drama"; Gilbert Knipmeyer, "Identical rimes in Chaucer"; Miss Verda Manners, "The authorship of 'The Two Noble Kinsmen'"; Miss Jessie K. Paxton, "Meredith as a satirist"; William E. St. John, "The nature and purpose of the comic as set forth by literary critics"; Miss Laura V. Schwartz, "Studies in the Legend of Saint Dunstan"; Francis A. Threlkeld, "A bibliography of Old English

translations into Modern English and Modern German"; Miss Ingegerd M. Uppman, "Old World influences on the poetry of Sidney Lanier"; Miss Louina M. Van Norman, "The military aristocracy in Chaucer."

Near the close of the year it was arranged, with the approval of the President and Trustees, to recognize distinct subdivisions of the work of the department under the titles Division of Public Speaking and Division of Journalism, with a view to the more convenient grouping of the courses and problems peculiar to those divisions. The members of the staff concerned with these subjects still have their places as members of the English department faculty, and it is not proposed to separate them for administrative purposes. The department has, however, recognized the propriety of specialization in public speaking or reading, on the part of major students in English, as had hitherto been recognized in the field of journalism. At the same time the requirements for graduation in the course in journalism have been revised.

There has been every reason to feel satisfaction with the experiment, initiated this year, of providing an instructor in dramatics who should serve as coach for dramatic performances given by the various student organizations, and assist in maintaining worthy standards both in the selection and the production of plays. Mr. Gordon Davis, who was appointed to this position, has, besides giving regular instruction in dramatic interpretation and production, directed five student plays presented in the Assembly Hall, and acted in an advisory capacity for the Junior Opera and the Ram's Head play. Mr. Davis has also organized a University Dramatic Council, representing all organizations giving plays in the Assembly Hall, with a view to securing maximum results for the time and money spent on such productions, and to the abolition of the element of private gain. Stanford plays are now staged independently of outside professional assistance, apparently with better results than formerly, from every point of view. It is hoped that this work may be further developed, as rapidly as is compatible with the budget of the department and the opportunity of training students in dramatic production without interfering with their studies, until in time a true university theatre, planned on unpretentious but adequate lines, may be a feature of Stanford community life.

The department has given special attention to the problem of providing elective courses in literature to meet the cultural needs of students in the Lower Division, under the newly organized curriculum. The chief question, not yet answered altogether satisfactorily, is how to provide instruction in such elementary courses on the part of mature, experienced, and inspiring teachers, and at the same time not to mass the students in such large groups that individual contact with these teachers is lost.

Professor Alden has published, during the year, a collection of "Critical Essays of the Early 19th Century," with introduction and notes, and an anthology called "Poems of the English Race." He attended, during the Christmas holidays, the annual meetings of the Modern Language Association, the Association of American Colleges, and the Association of University Professors, and at the first named meeting read a paper on Shakespearean Punctuation. Later he discussed the same subject before the Stanford Re-

search Club. Mr. Alden has continued his investigations, both individually and in connection with one of the departmental seminars, in the history of the Shakespeare text; and the development of this subject at Stanford has been happily furthered by important additions to the Shakespeare collection in the Library, obtained by Mr. Clark during his recent stay in England. Only a few sets are now lacking to give us a complete series of the texts significant for the history of Shakespeare criticism.

Professor Tatlock has carried on the direction of the Concordance to Chaucer, as Research Associate of the Carnegie Institution of Washington, with Professor Kennedy as co-editor, and with the assistance of Miss P. M. Carbaugh, Miss A. N. Hays, Mr. Gilbert Knipmeyer, and others. Important help for this work was also received from Professor R. K. Root of Princeton and Professor F. N. Robinson and Dr. P. F. Baum of Harvard. All that remains before the enterprise is finished is to add a few more variants, to adjust the arrangement finally, and to paste the quarter-million slips on sheets. Mr. Tatlock has contributed a paper on "Chaucer's 'Elcanor'" to *Modern Language Notes* and one on "The Epilogue of Chaucer's 'Troilus'" to *Modern Philology*. He was President of the Philological Association of the Pacific Coast during the year 1920, and gave the presidential address, on "Romanticism in the Middle Ages". During the year 1921 he is serving as an associate editor of the *University of California Chronicle*. He is a member of the Simplified Spelling Board, and a councillor of the Association of University Professors. As a member of the committee established by the latter body on Intellectual Interests of Undergraduates, he addressed the Stanford Forum on that subject at the May meeting.

Professor Bassett has continued to give considerable time to service as chairman of the University Committee on Public Exercises. He is preparing a new text-book in public speaking.

Professor Briggs has continued his researches in the history of English thought in the sixteenth century, and left for England at the close of the spring quarter to pursue his work at the British Museum and other libraries.

Professor Gray has contributed a paper on "Some Indications that 'The Tempest' Was Revised", to *Studies in Philology*, besides carrying on and directing other Shakespearian research in connection with his seminary. He has given a course of fifteen lectures on Modern Novelists before the Association of Collegiate Alumnae in San Jose, and has spoken on the Better Films Movement at the Annual Convention of the Civic League, the Congress of Parent-Teacher Associations, the California State Conference of Social Workers, etc.

Professor Seward has taken charge, at the request of the department, of the work in elementary composition in both English A and English 2, and has given much time to the new problems of organization of these courses, with gratifying results.

Professor Smith, representing the Division of Journalism, attended the Annual Conference of the American Association of Teachers of Journalism at Saint Louis, and also the American Association of College News Bureaus.

Professor Hall has continued his researches in American colonial literature, and in particular has been engaged in preparing a critical first edition of the poems of Benjamin Tompson, the earliest native-born American poet. Mr. Hall is also engaged in studying the needs of the University Library in the field of American literature and in assisting to build up this important and thus far rather meagre collection, so far as available resources permit.

Professor Kennedy has continued to devote a part of his time to editorial work on the Chaucer Dictionary. He has also continued the preparation of a Bibliography of the English Language, and contributed an article on the subject to *Modern Language Notes*.

Professor Russell has contributed to the *Psychological Review* a paper on "A Poet's Treatment of Emotion" and to the *Atlantic Monthly* an essay called "Its Two Little Horns."

Miss Mirrielees has contributed essays to the *Educational Review* ("Concerning History"), the *North American Review* ("Concerning Fathers"), the *Survey* ("The New Conscience"), and the *English Journal* ("In Behalf of Standardized Reading").

Mr. Davis, in addition to the work already noted in connection with the direction of University dramatics, made an address before the State Council of High School Teachers engaged in dramatic work, and, by invitation of the Director of the Greek Theatre of the University of California, served as co-director of the Theatre during the Summer Session at Berkeley.

The department is under great obligation, on behalf of the Division of Journalism, to Mr. John J. Cuddy, of the H. K. McCann Company, San Francisco, who generously gave his time and thought to the development of the course in Advertising, coming down at least once each week, without salary, and also securing a series of lectures for the students from experts in various specialties.

It is also desired to record our appreciation of the assistance rendered in the Free Reading course by colleagues outside the department, namely: Professors H. C. Brown, B. O. Foster, P. A. Martin, E. E. Robinson, and R. G. Trotter, Dr. D. Charles Gardner, Mr. C. V. Park, and Misses Margaret M. Lothrop, Alice N. Hays, Helen B. Sutliff, and Nina Almond.

RAYMOND MACDONALD ALDEN,
Professor of English.

GEOLOGY

The staff of the Department of Geology, for the year 1920-21, consisted of: Mr. James Perrin Smith, paleontology; Mr. Austin Flint Rogers, mineralogy; Mr. Cyrus Fisher Tolman, Jr., economic geology; Mr. Bailey Willis, general geology; Mrs. Ida S. Oldroyd, curator; Mr. Thomas S. Oldroyd, assistant curator. During the summer quarter of 1920 Mr. Stephen Taber was acting professor of geology, and in the autumn quarter, Mr. J. A. Taff was lecturer. Mr. Solon Shedd was acting professor of geology during the summer quarter of 1921.

The summer geological survey was carried on in 1920 in the oil fields of Ventura County under the direction of Mr. C. F. Tolman, Jr.; also in 1921 in the same region under the same instructor.

Mr. Smith has completed, for the U. S. Geological Survey, a monograph on the Upper Triassic faunas of North America. He has also been engaged in the preparation of a monograph on the Permian fauna of Timor.

The following researches have been carried on by Mr. Willis: Geologic investigations on the magnesite deposits and general geology of Stephens County, Washington; Studies in Petroleum in California; Studies in Structural Geology, in preparation of a manual on that subject.

Under Mr. Tolman's direction, laboratory investigation of ores has been continued throughout the year, and special study has been made of disseminated copper ores of Arizona. A report on the geology of the metalliferous regions of Arizona has been completed for the Arizona Bureau of Mines. Field study of the geology of the Santa Clara Oil Fields, Ventura County, California, was made last summer, and will be continued during the coming summer.

Mr. Rogers was engaged in revising his text-book on mineralogy; he has made collections of minerals and rocks in southern California, and has been engaged in other research in which progress has been made.

Mr. Rogers was elected a member of the Council of the Mineralogical Society of America.

Mrs. I. S. Oldroyd has completed for publication a treatise on the mollusca of Puget Sound, to be published by the University of Washington. She and Mr. T. S. Oldroyd have published in "Nautilus" numerous smaller papers on the conchology of the West Coast. In 1920 they explored the waters of Puget Sound, and in 1921 the coast of southern Alaska, collecting mollusca.

JAMES PERRIN SMITH,
Professor of Paleontology.

GERMANIC LANGUAGES

The department faculty for the year 1920-21 consisted of William Alpha Cooper, George Hempl, Karl Gustav Rendtorff, professors; Bruno Boezinger, associate professor; Catharine Morris Cox, instructor; Sophia Juliane Wolters, assistant in instruction.

The schedule of the year's work was so arranged that Mr. Rendtorff could have his vacation during the autumn quarter, which, added to his summer quarter vacation of the previous year, enabled him to go to Germany to study post-war conditions at first hand. On his return he was invited to report his observations, in public addresses, at and in the neighborhood of the University, and later accepted invitations to speak on the same subject at various places in and near San Francisco and San Diego.

Miss Cox, since 1914 a member of the faculty of the College of the Pacific, began her work as a member of the Stanford faculty in January,

after a year's work with The American Friends' Service Committee, as organizer and director of child feeding, with headquarters in Berlin. Her intimate knowledge of this great humanitarian work and her first-hand observations of conditions of undernourishment in Central Europe were used to advantage in the thirty-odd addresses which she was called upon to give before various organizations, at the University, in San Jose, San Francisco, Oakland, Sacramento, and elsewhere.

Mr. Rendtorff and Miss Cox were on duty during the summer quarter, the other members of the staff taking their vacation at that time. Mr. Hempl was granted a special leave of absence on account of illness, during the winter quarter.

During the year the material equipment of the department has been considerably enlarged. The equipment library, as it is called to distinguish it from the University library, is now four years old and numbers 1,750 volumes. From this collection about fifteen hundred loans have been made to students during the year, for reading outside of regular classes. This arrangement has proved a great convenience to students and has done much to cultivate the habit of extensive independent reading, resulting in facility and a sense of accomplishment. The collection of lantern slides, now ten years old, numbers at present 1,900 slides, which are thoroughly catalogued as to titles and subjects. The collection is being built up systematically to cover every possible field embraced in the work of the department. A knowledge of the country, its people, culture, and history being prerequisite to a thorough grasp of the language and literature, the pedagogical value of such illustrative aids is apparent. But the amount of time and work involved in selecting and cataloguing such a collection is not so readily appreciated.

The number of major students registered in the department was seven, of whom three were graduate students. The degree of Bachelor of Arts was conferred upon two students. The degree of Master of Arts was conferred upon: Sigrid Matilda Petersen, thesis, "The influence of Ibsen's 'Rosmersholm' upon Hauptmann's 'Einsame Menschen'"; and Sophia Juliane Wolters, thesis, "The teacher as portrayed in German literature."

WILLIAM ALPHA COOPER,
Professor of German.

GREEK

The faculty of the Department of Greek for the academic year 1920-21 has consisted of: Augustus T. Murray, professor; Ernest Whitney Martin, associate professor; and Mrs. Hallie Watters and Miss Hazel Dorothy Hansen, assistants.

Professor Murray was absent on leave during the autumn quarter of 1920, and Dr. Martin during the summer quarter of 1921.

It gives me much satisfaction to report that Miss Hansen has been awarded one of the University fellowships for the year 1921-22, and that Mrs. Watters has been appointed to one of the Stanford scholarships.

During the year I have been devoting much time to the preparation of my translation of the Iliad of Homer for the Loeb Classical Library. The first volume is practically ready for the press.

AUGUSTUS TABER MURRAY,
Professor of Greek.

HISTORY

The faculty of the department for the year consisted of: Ephraim Douglass Adams, Arley Barthlow Show, Payson Jackson Treat, professors; Edgar Eugene Robinson, Percy Alvin Martin, Ralph Haswell Lutz, associate professors; Yamato Ichihashi, Reginald George Trotter, assistant professors; Henry Barrett Learned (winter quarter), Everett Somerville Brown (spring and summer quarters), lecturers.

Courses in history were also given by Associate Professor Elmore of the Department of Latin, and Professor Rendtorff of the Department of German.

The student assistants during the year were: William Forbes Adams, Thelma Broadus, George Hurach Cloud, William Henry Cooke, Charles Roger Hicks, John Gaylord Howes, Shizuma Nara, Lulu Lo Rene McCandles, John Perry Pritchett, Mary Esther Sprott, Lucy Marion Wilcox.

On October 28, 1920, the department and the University suffered a great loss in the death of Professor Show. He had been in ill health for two years past, but with unfailing courage had carried his work in class, and had continued his researches. The Academic Council, on motion by Registrar Elliott, adopted the following resolution:

Professor Show came to Stanford at the beginning of the University's second year. At the time of his death he was within a few months of the retirement age, and in August next would have completed twenty-nine years of active service. Throughout this long period of development and testing, Professor Show was recognized as one of the staunch men of the University, loyally devoted to its highest interests. As a member of working committees, and in faculty deliberations he was always interested, constructive, and of sound judgment. In his own department he held to high standards and was recognized as a wise counselor and successful teacher. As a colleague he was hearty, appreciative, courteous, a good companion and friend. In community affairs he took his full part and was preëminently the good citizen. In the Stanford environment he found opportunity for his own development and gave back to the University the best that was in him.

In grateful recognition of the fine qualities exemplified in Professor Show's long life among us and in appreciation of his comradeship and friendship this tribute is hereby adopted and ordered spread on the minutes of the Academic Council.

In the emergency caused by Professor Show's death, his classes were carried for the remainder of the fall quarter by Professor Lutz. Dr. H. Barrett Learned, of Washington, D. C., who had lectured at Stanford in the previous year, was again secured for the winter quarter, while for the spring and summer quarters Dr. Everett Somerville Brown was appointed lecturer.

Mr. Brown graduated at the University of California in 1907, and took his Ph. D. in history at that institution in 1917. He has taught in the public schools of California, and during the war was chief of the press clipping section of the United States Food Administration at Washington, D. C. In September, 1921, he leaves Stanford, accepting an appointment as assistant professor in the University of Michigan.

A permanent arrangement for the work in mediaeval history and for instruction in the methods of history teaching in the schools, has been made by the appointment as associate professor, service to begin in October, 1921, of Professor Edward Maslin Hulme of the University of Idaho. Mr. Hulme graduated at Stanford in 1897, studied at Harvard and Cornell, received the M. A. degree at the latter institution in 1902, and in September of that year became professor of history in the University of Idaho. In 1917 he became dean of the College of Letters and Science. He is the author of a well known and authoritative work entitled "The Renaissance, the Protestant Revolution, and the Catholic Reaction in Continental Europe." (1914). He has taught in the summer sessions of the University of California, and of the University of Chicago, and in the winter quarter of 1918 was acting professor of European history at Stanford.

Additional instruction in the field of modern European history has now been provided for by the appointment as associate professor of Dr. Frank Alfred Golder of the State College of Washington, Pullman, Washington. Dr. Golder, in September, 1920, resigned his professorship at Pullman to become the chief agent in Europe for the Hoover War Collection. His work in the history department will be centered upon the Slavic states of Europe in the field with which he has long been familiar, but will also cover the western Baltic states and modern Germany. He does not, however, return to Stanford until October, 1922, and for the winter and spring quarters of the year 1921-22, a part of the courses planned for him will be carried by Dr. H. Barrett Learned, who again returns to us as acting associate professor of history. Dr. Golder was born in Russia in 1877, came to the United States in 1880, was graduated at Harvard in 1903, and received the degree of Ph. D. there in 1909. He has taught at the University of Missouri, Boston University, the University of Chicago, and in 1910 became professor of history at Pullman. He has repeatedly studied abroad, and in 1914, at the outbreak of the war, was in Petrograd making historical researches in Russian archives on behalf of the Carnegie Institution of Washington. He was on the staff of the Colonel House commission of inquiry preparatory to peace, in 1917. His most noteworthy historical production is a book entitled "Russian Expansion on the Pacific." (1914).

Mr. Ichihashi's leave of absence, begun in October, 1919, was continued throughout the last year, which was spent by him in study in Paris. He returns in October, 1921, to resume his teaching in the history department, but not in the Department of Economics. In the past Mr. Ichihashi has been on temporary appointment, his salary being paid in part by the University, in part by a group of Japanese donors. There has now been established by Japanese donors, for whom Baron Shibusawa has made the

arrangement, a chair of Japanese history and civilization, to which the trustees have appointed Mr. Ichihashi as assistant professor, on the customary terms of such appointment, and to the income derived from the fund provided by the donors, the University for the present, adds a substantial sum toward salary. By the agreement made with the donors, a fund is provided for the chair, to be filled by a Japanese scholar, but his selection and his term of service are determined by the University.

Mr. Adams and Mr. Lutz, Directors of the Hoover War Library, have continued active work in gathering materials. Details of progress in this work are included in the report of the President of the University.

Throughout the year Mr. Adams, in an emergency confronting the department of history at the University of California, gave regular instruction at that institution twice weekly in European history. He also delivered many public lectures, among them courses of five lectures each on the New States of Central Europe, before the San Jose Normal School, and the First Congregational Church of San Francisco.

Mr. Treat continued to act as contributing editor of the *Journal of International Relations*, and gave ten public addresses on subjects connected with the Far East. He will be on leave of absence in the coming fall and winter quarters, visiting Japan and China, where he is to give lectures at the Imperial universities of Tokyo and Kyoto, and the universities of Waseda and Keiogiijuku in Japan, and at Peking University and Yale College in China. He has a book in press entitled "Japan and the United States, 1853-1921," for publication in the autumn.

Mr. Robinson spent the autumn quarter in New York and Washington, gathering materials on the presidential campaign, and in Washington working in the manuscript division of the Library of Congress. Upon his return to the University in January he resumed editorial charge of "Stanford in the Great War," and resumed direction of work on a Calendar of the Stephen M. White Papers, the most considerable collection made under the provisions of the Borel Fund. Additional pieces have been added to fill gaps in this collection. A calendar has been commenced, two former graduate students, Miss Eloise Langmede and Miss Margaret Bennett being employed. Five volumes of "Letters Sent" and of "Letters Received" have been completed and an index prepared for these. The method followed is similar to that used in the Library of Congress, and it is hoped by the publication of this calendar to make these important papers accessible to students of California history.

Mr. Martin, in the autumn of 1920, was asked to serve as a member of the Committee appointed by the American Council on Education to draw up a report on the standing of secondary schools throughout Latin America. At a meeting of this Committee held at Washington in December 1920, a tentative report was drawn up and plans were laid for the preparation of a comprehensive survey of the whole field of secondary education throughout Latin America. In May 1921, Mr. Martin delivered the Albert Shaw Lectures on Diplomatic History at Johns Hopkins University, the special subject being "Latin America and the War." On the same occasion he acted as one of the delegates of Stanford University to

the annual meeting of the American Council of Education, held at Washington. During the academic year 1920-21 Mr. Martin continued to serve actively as a member of the board of editors of the "Hispanic American Historical Review."

Mr. Lutz attended the annual meeting of the American Historical Association in December 1920 at Washington, D. C., and read a paper on "The Spartan Uprisings in Germany" before the joint session of the A. H. A. and the American Political Science Association. He has made ten public addresses on subjects connected with the World War.

The summer quarter work of 1921 was carried by Mr. Treat, Mr. Lutz and Mr. Brown.

At Commencement in June 1921, President Wilbur announced the establishment of a new scholarship yielding \$500 annually, the gift of Emma L. Martin and her sister of New York City. This scholarship is in commemoration of Mabel Hyde Cory, a Stanford graduate, and is to bear her name. It is to be granted to a woman student in the History department and for the year 1921-22 has been given to Miss Virginia B. Lowers, a member of the class of 1922.

The number of major students registered in the department was: autumn quarter, undergraduates 92, graduates 10; winter quarter, undergraduates 78, graduates 12; spring quarter, undergraduates 69, graduates 16; summer quarter, undergraduates 17, graduates 10.

The Master of Arts degree was conferred in June 1921, upon: Thelma Broadus, thesis, "Housing Problem in England and Wales, 1906-14;" George Hurach Cloud, thesis, "The Armenian Question from the Congress of Berlin to the Armenian Massacres (1878-1894);" Lulu L. McCanles, thesis, "Progress of the Indians of the Canadian Northwest Under the Dominion;" Alice McElin, thesis, "The National Security League, Its Work and Policy;" Avis Middleton, thesis, "The Temperance Movement in England During the War;" Mary Esther Sprott, thesis, "A Survey of British War Time Propaganda in America Issued from Wellington House;" Russell Brennan Stevens, thesis, "Hong Kong. A Study in British Empire Building."

EPHRAIM DOUGLASS ADAMS,

Professor of History.

HOPKINS MARINE STATION

The Director has continued, during the first three quarters of the year, his study of the Asteriidae, a family of sea stars. The results are to form a part of the second volume of his "Asteroidea of the North Pacific," the completion of which will require two more years. Daily records of the temperature and salinity of the sea have been continued through the year.

Dr. Leroy Abrams, of the Department of Botany, while teaching during the summer quarter, read proof on his "Flora of California."

Dr. J. P. Baumberger, of the Department of Physiology, in collaboration with Dr. Olmsted, continued work, during the summer quarter, on the

physiology of the molting of grapsoid crabs, a problem begun last year. The statistical aspect of the problem is ready for publication.

Mr. W. J. Allexaht, a student, during the summer quarter worked with Dr. Baumberger on the problem of the nature and location of the receptive substance of Langley and the action of curare.

Dr. Edwin Grant Conklin, Professor of Biology, Princeton University, spent six weeks during the spring quarter in studying spermatogenesis in gastropod mollusks.

During the Christmas vacation, and again in May, Dr. N. L. Gardner, of the Department of Botany, University of California, continued his studies on marine algae.

Dr. William A. Hilton, Professor of Zoology, Pomona College, during part of September 1920, studied the Pycnogonida found in the vicinity of the Station.

Dr. Myrtle E. Johnson and Miss Gertrude Peirson spent several weeks in studying and figuring some of the commoner living invertebrates. Dr. Johnson has in preparation a manual of the marine invertebrates of the coast, a work which will prove very useful in the teaching work of the Station.

Dr. Albert Mann, of the Carnegie Institution, and one of the foremost diatomists of the world, spent several days at the station in August. In addition to his interest in the local marine diatoms Dr. Mann's mission was to arouse interest in the study of this most important group of marine plants.

During July, Dr. F. M. McFarland continued his investigations of the Aeolid nudibranch mollusks.

Dr. T. H. Morgan procured material for a special problem connected with early cleavage stages in sea-urchins' eggs.

Dr. J. M. D. Olmsted, while teaching during the summer quarter, investigated the functions of the central nervous system of marine polyclad worms, with especial reference to the regeneration of lost parts, and coördinated movements in locomotion. With J. P. Baumberger he continued work on the physiology of the molting of grapsoid crabs.

Professor Myra Sampson, of the Department of Physiology, Smith College, worked from December until June on the chemistry of fertilization.

Dr. Tage Skogsberg, of the University of Uppsala, Sweden, was in residence at the Station from November until July investigating the marine ostracod crustacea of Monterey Bay.

Professor E. C. Starks, of the Department of Zoology, having been placed in charge of an investigation of marine mammals, by the California Fish and Game Commission, spent the summer in reporting upon the whale fishery at Moss Landing, Monterey County, and upon the present condition of the sea lions and seals.

Mr. W. F. Thompson and Mr. W. L. Scofield, of the California Fish and Game Commission, have spent the greater part of the year at the Station investigating the life history of the sardine and albacore. Mr. E. A. McGregor, working under the direction of Professor J. O. Snyder, has been studying the salmon.

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During three quarters, Dr. Gertrude Van Wagenen, as a University Fellow, studied the sea anemones and corals of Monterey Bay.

Professor F. W. Weymouth, of the Department of Physiology, has recently published a paper, "The Edible Clams, Mussels and Scallops of California," (Fish Bulletin No. 4, Fish and Game Commission, January 10, 1921) embodying the results of work carried on in large part at the Hopkins Marine Station during 1919 and 1920. A second paper dealing with the life history of the Pismo clam (*Tivela stultorum*) and presenting extensive data on the physiology of growth covering a period of three years is nearing completion. With Dwight L. Wilbur he is carrying on an investigation of certain phases of digestion in Actinians.

Mr. W. S. Wallace, Assistant at the Station, has been assiduously collecting and classifying the numerous species of local hydroids.

WALTER KENRICK FISHER,
Associate Professor of
Zoology and Director.

LATIN

During the academic year 1920-21 the faculty of the Latin department consisted of: Henry Rushton Fairclough, professor; Jefferson Elmore and Benjamin Oliver Foster, associate professors; and Miss Dorothy Gilson, assistant in instruction. Professor Elmore was absent from residence in the winter quarter, Professor Foster in the spring quarter, and Professor Fairclough in the summer quarter.

At the opening of the academic year, Professor Fairclough returned to the University after an absence of twenty-eight months, spent in American Red Cross work in Switzerland and Montenegro. As a result he has frequently been called upon to lecture before various organizations in the State, either upon the relief work in which he had been engaged, or upon the Balkan countries which he had visited. From January to May he also gave weekly lectures in the Church Divinity School of the Pacific, San Francisco, in the department of New Testament Language and Literature, and in the Summer Session of the University of California he took charge, on invitation, of the Latin courses there offered. This last experience was most valuable, as it brought him into contact with many teachers and advanced students. During this Session, there was held at Berkeley a meeting of the Classical Association of the Pacific States, before which he spoke on "Personal Experiences in the Balkans," while later at a session of the San Francisco Society of the Archaeological Institute, held in connection with the Pacific Division of the American Association for the Advancement of Science, he read a paper on "Roman Remains in Montenegro."

Professor Foster has devoted much time to his translation of Livy for the Loeb Classical Library, of which the first volume appeared last year, and Professor Elmore is making rapid progress with the French Grammar in which he is collaborating with Professor O. M. Johnston.

Through the Latin Department this University contributes to the support of the American Academy in Rome and our graduates may therefore, without fees, enjoy the privileges of that excellent institution, which deserves to be better known. Among the graduates who have already availed themselves of these privileges are Dr. Anna Cox, now Professor of Latin in Mills College, California, and Dr. Katharine Lummis, now Professor of Latin in Sweet Briar College, Virginia.

HENRY RUSHTON FAIRCLOUGH,
Professor of Latin.

LAW

During the year the faculty of the Law School has consisted of Charles Andrews Huston, professor and dean; Arthur Martin Cathcart, Joseph Walter Bingham, Clarke Butler Whittier, Chester Garfield Vernier, Marion Rice Kirkwood, professors; William Brownlee Owens, associate professor; Oscar Kennedy Cushing of the San Francisco bar, Henrie Granville Hill of the San Jose bar, lecturers.

The faculty for the summer quarter was composed of Professors Cathcart and Kirkwood and Associate Professor Owens from the regular faculty; Dean William Green Hale of the University of Oregon School of Law, Professor Frederick Green of the University of Illinois College of Law, Assistant Professor George Edward Osborne of the University of West Virginia College of Law, Assistant Professor Bryant Smith of the University of Colorado Law School, and Dr. Howard Landis Bevis of the Cincinnati bar. Professor Huston taught throughout the summer quarter at the University of Chicago Law School.

The total registration of students in the Law School was 213, of whom 67 were graduate students, 143 were undergraduates, and 3 were specials.

Special students to be admitted to the Law School must have secured admission to the University in regular undergraduate standing, and be qualified by their age—over twenty-three years—and previous business experience to carry work in a professional curriculum. They are not eligible for a degree.

The attendance during the summer quarter of 1921 was 78. This is an increase of 10 over the registration for the summer of 1920. The policy of the Law School is to offer during the summer quarter some required courses from the first year curriculum to enable students anxious to begin the study of law to save a quarter's time; and also to offer a selection of more specialized courses, in the main supplementing rather than duplicating the work offered during the three preceding quarters.

As long as the faculty is not numerous enough to enable the School to offer the complete law curriculum every year, it will be necessary to provide some courses only in alternate years; or, as is the case at the present, even less frequently than once in two years. By providing some of these courses in the summer quarter the hardship of the alternating plan, especially as it affects students who graduate in the autumn or winter quarters, is mitigated. It is, however, desirable, in view of the fact that the curriculum in law is well defined and its students are examined upon it when they seek

admission to the bar, that the number of the faculty be increased at a very early date, so as to make it possible for any student who spends here the nine quarters of residence required for the professional degree to have had opportunity to cover the complete curriculum.

Outside of the regular professional curriculum members of the law faculty gave the following courses in the University: Introduction to the Study of Law, Professor Kirkwood; Medical Jurisprudence lectures, for students of the Stanford Medical School, Professors Huston, Cathcart, Whittier and Vernier; Business Law, for non-law majors chiefly from the Economic and Engineering Departments, Professor Owens. These service courses are all largely attended and undoubtedly are of value to the University. They press heavily, however, upon the time of the law faculty and prevent a part of that time being given to the teaching of professional students. Since the work of the Citizenship Course in Government, taken by all Lower Division students, covers some important parts of the course in Introduction to Law and since practically all intending Law majors take English History in the Lower Division, it has been thought possible and advisable to drop the course in Introduction to Law and distribute the more strictly professional elements in it among the required first year courses in the Law School.

During the year Professor Cathcart has rendered valuable public service as Mayor of Palo Alto, and Professor Kirkwood as a member of the Palo Alto School Board. Professor Kirkwood delivered the Annual Address of the California Bar Association before the meeting of that body at Santa Cruz. His subject was The Ever Increasing Law Reports and their Relation to the Development of our Case Law. By invitation of the Fresno County Bar Association, Professors Whittier and Huston addressed monthly meetings of this Association.

CHARLES ANDREWS HUSTON,
Professor of Law and
Dean of the Law School.

MATHEMATICS

The staff of the department for the year 1920-21 consisted of Robert Edgar Allardice, Rufus Lot Green, Hans Frederik Blichfeldt, professors; Heinrich Wilhelm Brinkmann, instructor for the summer quarter; Dorothy Rose Crever and Sadie Gilmore Hackley, teaching assistants for the autumn and winter quarters.

The degree of master of arts was conferred upon one student and the degree of bachelor of arts upon nine students.

During the year Mr. Allardice made a special study of the theory of self-dual curves.

Mr. Blichfeldt made a study of the approximate solution in integers of a set of linear equations, the principal results of which he read before the annual meeting of the National Academy of Science at Washington, D. C.

HANS FREDERIK BLICHFELDT,
Professor of Mathematics.

MECHANICAL ENGINEERING

The teaching force in the department for the year 1920-21 was as follows: William Frederick Durand, professor of mechanical engineering; Guido Hugo Marx, professor of machine design; William Rankine Eckart, professor of experimental engineering; Everett Parker Lesley, professor of industrial engineering; Charles Norman Cross, assistant professor of mechanical engineering; Lawrence Edminster Cutter, assistant professor of drawing; Horatio Stebbins, assistant professor of experimental engineering; Edward John Stanley, teaching specialist in pattern making; James Bennett Liggett, teaching specialist in foundry; Theron James Palmateer, teaching specialist in machine shop; Robert Henry Harcourt, teaching specialist in forge shop.

The increase in the number of students noted in the report for 1919-20 has continued for the past year and the need for an additional instructor in carrying on the work of the first two years, especially in elementary and machine drawing, is still most pressing. This condition is one which should receive first consideration in plans for the coming year.

The readjustments of work incident to the inauguration of the Lower Division system have borne chiefly on the subject of shop work. Under the requirements of this system shop work will be taken largely in the later years of the course rather than in the earlier years. This has greatly reduced the number of students taking shop work for the past year with corresponding reduction in the fees which normally come from this source. These matters will adjust themselves with time, however, to a normal program with shop work taken in scattering cases during the earlier years, and in greater measure during the later years of the course.

Aside from this temporary condition, the inauguration of the Lower Division system has made but slight change in the work of the department and there seems to be no reason for anticipating any difficulty in meeting the purposes of this system with perhaps some minor adjustments involving matters of sequence in the various courses required.

During the year the Aerodynamic laboratory has been in use for a continuation of the series of researches on air propellers for the National Advisory Committee for Aeronautics. This work is under the immediate charge of Professor E. P. Lesley, with Professor W. F. Durand acting in an advisory capacity.

The work of the department, generally, has gone forward throughout the year smoothly and effectively.

During the summer quarter the machine shop was open for instruction, and with a fair attendance due largely to the considerable number of new regular students entering the present summer. The experience of the past few years in connection with the shops has indicated the desirability of keeping all shops open during the fall, winter, and spring quarters. If this purpose is to be realized it will be difficult to continue to offer shop courses regularly for the summer quarter without some readjustments in personnel. Either additional instructors will be required for a part of the year or otherwise some arrangement covering extra compensation for an instructor teaching four quarters in the year.

RESEARCHES IN PROGRESS OR COMPLETED

W. F. Durand: Developments in the theory of the general nomogram for linear equations with n variables; Application of the principle of kinematic similitude to the problem of the surge chamber (Paper before National Academy of Sciences); Studies in the theory of water hammer.

W. F. Durand and E. P. Lesley: Completion of research supported by grant from the National Advisory Committee for Aeronautics, Washington, D. C., and related to the characteristics of performance of air propellers operating under large angles of yaw, as in the case of Helicopter flight; Completion of research supported by grant as in preceding case and relating to a general analysis of the results of three years preceding investigation on the general characteristic of operation of air propellers.

G. H. Marx and L. E. Cutter: Continuation of investigation of wear of gear-teeth.

W. R. Eckart: Continuation of the experimental investigation of the problem of heat transmission between fluids of various physical properties through metal tubing. These studies were made both in the field and in the laboratory. As part of this investigation, the thesis of Messrs. Purdy and Wilcox upon the transmission of heat from the metal surface of tubes of different diameters to water flowing through them, was carried out.

H. W. Stebbins: Investigation of the heat losses from bare pipes carrying saturated and superheated steam, particularly as affected by the velocity of flow. In connection with this subject, Mr. Charles Hubbard is preparing a thesis.

WILLIAM FREDERICK DURAND,
Professor of Mechanical Engineering.

MEDICAL SCHOOL

The registration of medical students for the year was as follows: First-year students, 56; second-year students, 36; third-year students, 23; fourth-year students, 30; fifth-year students, internes, 16; total, 161. One Belgian Exchange Fellow received the degree of Master of Arts. Sixteen students (fourteen men and two women) were granted the degree of Doctor of Medicine during the year. Twenty-two special workers were registered during the year.

The attendance in the Out-Patient Clinics was as follows: New patients, 11,464; old patients, 62,895; total number of visits, 80,514.

The Popular Medical Lectures for 1920-21 were delivered by Dr. William Palmer Lucas of the University of California; Judge Curtis D. Wilbur of the Supreme Court of San Francisco; Dr. Olga Bridgman of the University of California; President Ray Lyman Wilbur; and Professor Jessica Peixotto of the University of California.

The Jordan Medical Scholars for the year were Charles F. Sebastian, October, 1920 to April, 1921; Merlin T. Maynard, April, 1921 to September 1921; Archibald W. Warnock for the entire year.

Dr. Emmet Rixford established a fellowship of \$500 with the idea of stimulating original research work in surgery. This amount is to be paid some graduate of the Stanford Medical School or some member of the Staff of the Medical School of rank under that of assistant professor to be chosen by the Medical Faculty in order to assist in defraying expenses incurred by him in working on some surgical problem, anatomical, physiological, pathological, or clinical, the problem to be approved by the Faculty.

The Committee of the Medical Faculty on the Beasley Memorial Fellowship is collecting funds to establish a fellowship in honor of Dr. Shadworth Oldham Beasley, a member of the Medical Faculty and Major in the United States Expeditionary Force, who died in action during the late World War.

The Colloquia which were inaugurated by the San Francisco Polyclinic have been continued. These Colloquia are given on Thursdays and Fridays at the San Francisco Hospital by the combined visiting staff of the San Francisco Polyclinic and the Medical School and are open to graduates in medicine as well as to medical students. In addition, there are offered at the Medical School daily mid-day clinics in medicine and the medical specialties, surgery and the surgical specialties, pathology, obstetrics and gynecology, which are likewise open to the members of the profession.

The Medical School was granted in addition to the \$7200 received last year a new appropriation of \$1200 from the United States Interdepartmental Social Hygiene Board for the continuance of research work in venereal diseases.

Professor L. Emmet Holt of Columbia University, New York, will deliver the Lane Medical Lectures in December, 1921. The general subject will be that of Growth and Nutrition.

The Stanford Clinics Auxiliary and San Francisco Maternity have continued to carry on their good work in the clinics. It is becoming more and more apparent what an important help the Social Service Department under the control of the Auxiliary is in conducting the medical work in the clinics and hospitals. The thanks of the patients and of the Medical School are due to the ladies of the Auxiliary Board for the splendid work which they are doing. Mrs. Katherine Barnett, who has been the director of Social Service for a considerable number of years, resigned and her place has been taken by Miss Marguerite Wales, A. B. Vassar; R. N.

It is my sad duty to report the death of Dr. A. W. Hoisholt, Clinical Professor of Medicine assigned to Psychiatry. Dr. Hoisholt, in spite of his arduous duties as medical superintendent of the Napa State Hospital devoted a very considerable time and much energy to the conduct of the Psychiatric Clinic and the proper teaching of students in Psychiatry. I believe there are few medical schools in which the students had as competent guidance in this field as they have had in our school under the direction of a man of such eminent qualifications as a scholar and practitioner as Dr. Hoisholt. The work in the Psychiatric Clinic has been taken over by Assistant Professor H. G. Mehrtens. In his didactic work he will be assisted by Dr. J. A. Cutting of the Agnew State Hospital, who is an

alumnus of Cooper Medical College and who was senior interne in medicine under Dr. Wilbur in the early days of the Stanford Medical School.

Another lamentable death among the members of the Medical Faculty was that of Dr. A. C. Crawford, who has been in charge of the teaching of Pharmacology ever since the Stanford Medical School opened. He was an earnest worker in his field and much beloved by both faculty and students. His place has been taken by Professor Hanzlik, who comes to us from the Western Reserve Medical School and who has taken hold of the Department of Pharmacology with much vigor and enthusiasm.

After about a decade of existence the Medical School recommended a revision of its Articles of Organization to the President and the Board of Trustees, which was adopted by the latter in June, 1921. It is to the great credit of those who originally drew up these Articles of Organization that no material changes were necessary.

For some time there has been a good deal of discussion in the Faculty as to whether the double transfer of students from Stanford to San Francisco in April and in October gave the students sufficient advantages to overcome the objections that might be raised against this arrangement on the part of the teachers who as a result of the double transfer were burdened with a considerable amount of duplication in the work of instruction. After a very thorough investigation of this question and also as a result of the attitude of the students, as expressed by them officially to the faculty, it was decided to abolish the double transfer and to permit the students to come to San Francisco only in April. This will facilitate the instruction in the first two years of the Medical School, will permit the students to proceed regularly from one subject to another, and will have the additional advantage of our being able to devote the summer quarter to instruction in advanced work. It is hoped that both students and properly qualified graduates in medicine may be attracted to the Medical School in the summer quarter for work of this character.

Another serious question which arose was that of the number of students permissible in that portion of the Medical School which is in San Francisco. A careful reinvestigation of the whole problem showed that the original conviction that only 25 students should be allowed in each class was thoroughly borne out by the facts, and the faculty decided not to increase the number of students until the facilities for teaching in the city can be substantially enlarged.

WILLIAM OPHÜLS,
Dean.

STANFORD HOSPITALS

During the year 1920-21 the total number of patient days shown by the census of Lane and Stanford University Hospitals was 88,035. This was 4,400 less than for the previous year, but the loss was entirely in Lane Hospital which showed a decrease from 54,324 to 47,290 or 7,134. Stanford increased during the same period from 38,111 to 40,745 making a gain of 2,634.

The decrease in Lane is due partly to harder times among the working classes and partly to the higher ward rates now being charged for clinic patients. It will be noted for instance in the accompanying table that while the patient days were less in Lane Hospital the total number of patients admitted was greater by 242, the figures being 5350 as against 5108 for the previous year. In Stanford the condition is reversed. The total number admitted was 3080 as against 3393 for the previous year.

The larger patient day record of Stanford for this year is chiefly due to an increased number of war risk insurance patients accommodated in the wards.

ADMISSIONS

Private	3,975
Clinic	4,825
Free beds	212
S. F. M.	45
Infants born	514
Total	9,571
Patients died	225
Autopsies	63

PATIENT DAYS

Lane Hospital	47,290
Stanford University Hospital	40,745

Total			88,035
	Patient Days	Patients Admitted	Average Per Day
Stanford—			
Rooms	19,451	1,595	53.40
Wards	18,126	1,239	48.04
(Infants)	3,168	246	8.64
	40,745	3,080	110.08
Clinic—			
Private	12,223	1,141	34.44
Medical	10,028		
Surgical	10,242		
Gynecological	3,986		
Clinic { Obstetrics	3,272	5,350	95.65
Infants	3,037		
Children (Pr. & Cl.)	4,502		
	47,290	6,491	130.09
Totals	88,035	9,571	240.17

GENERAL STATISTICS

Resident staff	18
Daily average number employees	212
Daily average number pupil nurses	128
Daily average number instructing nurses	17
Greatest number of patients (May 27, 1921)	287
Smallest number of patients (August 28, 1921)	171
Number of private operations	2288
Number of clinic operations	1597
Number of X-Ray plates, Clinic	7231

Number of X-Ray films, Clinic.....	7530
Number of X-Ray plates, Private.....	8581
Number of X-Ray films, Private.....	4264
Number of Electrotherapy treatments.....	2471
Number of Hydrotherapy treatments.....	2897
Number of Electrocardiograph examinations.....	363
Occupancy, (309 beds).....	77%
Occupancy, Stanford (126 beds).....	87%
Occupancy, Lane (183 beds).....	71%

ALTERATIONS AND IMPROVEMENTS

CHILDREN'S WARD

In Lane Hospital the chief change to be noted is the remodeling and enlargement of the Children's Ward. Following the suggestions of Dr. H. K. Faber and the plans provided by the Architects Bakewell and Brown, the completed Children's Ward is now one of the most attractive and convenient departments of the hospital. The alterations consisted of converting one wing of the hospital, formerly given over to private rooms, into wards and accessory accommodations which now include receiving rooms, admission ward, clinic ward, private ward, bathing and dressing rooms, clinic feeding ward, private feeding ward, formula kitchen, service kitchen, treatment rooms, a sun room and finally a large sun porch where the children's beds may be wheeled to give them the benefits of fresh air treatment.

OFFICE QUARTERS

In order to provide separate accommodations for the Chief Accountant, a portion of the Lane Hospital waiting room has been partitioned off. This arrangement provides a clear view of all the office staff and places the Chief Accountant near the registration desk so that questions of credit may be easily settled at time of patient's entry.

LAUNDRY

In preparing for increased work with the coming enlargement of the School of Nursing, two new 30 inch high speed extractors have been installed. These together with the expected addition of a new tumbler will meet the increased demands.

STANFORD HOSPITAL

Nothing new has been added to the equipment or accommodations of this hospital except in the X-Ray department noted below. Patients and the attending staff seem well pleased with the service provided. A roof garden is needed as patients are compelled to use the ambulance court for fresh air treatment. Plans for this addition are waiting action.

HYDROTHERAPY AND ELECTROTHERAPY

Dr. Natalie Selling resigned her position as assistant in the department and has been succeeded by Dr. Robert Kile, who will assume his position October 1, 1921. Dr. Harry Langnecker still continues in charge and reports a considerable increase in the number of patients treated during the past year as follows:

	This Year	Last Year
Electrotherapy treatments	2471	2243
Hydrotherapy treatments	2899	2083

STAFF

During the past year Dr. H. G. Mehrtens served as House Physician, Dr. R. L. Draper as first assistant House Physician, Dr. Leroy R. Brooks as second assistant, and Dr. Albert V. Pettit as Resident in Obstetrics and Gynecology.

INTERNES

The Senior Internes for the year were Russel V. Lee and Frances Ford in Medicine and Pediatrics, Hans von Geldern in Obstetrics and Gynecology, Lloyd R. Reynolds in Surgery, and Rea Ashley in Ear, Nose and Throat.

The Junior Internes were B. D. Alexander, G. H. Becker, J. W. Jones, R. T. Haig, William Mills, G. W. Nagel, W. F. Pritchard, J. A. Sampson, D. E. Shepardson, C. F. Sebastian.

X-RAY

The complete remodeling of the rooms and equipment of this department according to suggestions of Doctors Chamberlain and Newell and following plans provided by Bakewell and Brown has resulted in greater convenience for handling patients and has more than doubled the capacity of this plant. The viewing room is a special feature of the new arrangements and is a source of much satisfaction to physicians and visitors. An extra stenographer has been added to the clerical force of this department which is now organized as follows:

W. Edward Chamberlain, M.D.....	Director of Laboratory
Robert R. Newell, M.D.....	Assistant Director
Miss Frances Marron.....	Chief Clerk and Technician
Miss Alice Lee Kincaid.....	Technician
Miss Alice McCausland.....	Technician
Miss Avis Burchard.....	Dark-room technician
Mrs. F. Hodge.....	Stenographer
Mrs. L. Downey.....	Stenographer

COMMISSARY DEPARTMENT

Miss Lottie Sloan remains in charge of this department with A. Bogler as Chef. A recent survey shows the following:

MEALS SERVED

Lane Hospital (patients, nurses, help).....	37,493 per mo.
Stanford Hospital (patients).....	8,468 per mo.

COST PER MEAL

Cost per meal, Lane	\$0.1831
Cost per meal, Stanford	0.8230
Food cost per meal, Lane	0.1484
Food cost per meal, Stanford.....	0.4927

NEW DINING ROOM

A separate dining room for the Superintendent of Nurses and her staff has recently been partitioned off from the main nurses dining room.

Motor driven pastry and dough mixers have been added to the kitchen equipment during the past year and the ventilation of the pantries and kitchens has been much improved by fitting all skylights with louvres.

STOREROOMS

The storeroom remains in charge of Mr. E. L. Slack with no important changes to be noted.

The Central Nurses Supply Room in charge of Miss Clara DeForrest continues to provide efficient and economical service in handling surgical and medical supplies.

SCHOOL OF NURSING

The resignation of Miss Elizabeth Hogue (Mrs. H. Staats Moore) as Superintendent of Nurses taking effect August 1, 1921, was accepted with much regret. She held this position for seven years with an interval of fourteen months during the war when she had charge of the Nurses in the Stanford Naval Unit.

During her administration the training school advanced to a high degree in organized instruction, discipline and in nursing efficiency. Under her also the plans for the new nurses school and home were perfected.

This building was planned to be occupied in August of this year but will not be ready until December owing to the long continued builders strike.

BUSINESS OFFICE

The volume of business handled in the office for the past year amounted to \$574,889.86. The record for collections showed a loss through uncollectable accounts of three tenths of one per cent.

PALO ALTO HOSPITAL

On July 1st the University took over the administration of the Peninsula Hospital at Palo Alto under the following arrangements. In order to prevent the closing of the institution by the stockholders which would leave the city without hospital accommodations a bond election was held and the institution purchased.

The idea of city ownership was to ensure an accessible and well conducted hospital for the convenience of citizens but not for public or charitable purposes. It was desirable also to continue the hospital for the convenience of students and others connected with the University. By mutual agreement the University assumed charge of the institution placing it in care of the Comptroller and under the management of Lane and Stanford University Hospitals.

For legal and other reasons the City Supervisors decided to change the name from Peninsula Hospital to Palo Alto Hospital. This act also possesses the advantage of calling attention to the fact that the hospital is under new management, with new plans and new ideals.

For future comparisons the following statistical summary is presented based on 1920 reports by the previous management:

Beds	48
Average patients per day.....	21.5

Patient days	7874
Cost per patient day.....	7.49
Income per patient day.....	6.82
Additional patient days needed to meet 1920 expenses.....	808.13
Additional patients per day needed to meet 1920 expenses.....	2.25

In assuming charge Mrs. M. E. Barry was requested to continue in charge as Superintendent. Changes were made in the Operating Room and Commissary department but the staff otherwise remains the same.

DIETETICS

Miss Imogene Calderwood, formerly first assistant dietitian of Stanford University Hospital, was placed in full charge of the Commissary department with an entirely new force of kitchen help. This reorganization was deemed vital in order that the necessary attention might be given to invalid diet and that the subject of dietetics might be given its due importance in the treatment of the sick.

An X-Ray department has been organized under the charge of Dr. Robert F. Powers. Suitable quarters now in course of construction have been provided in the basement of the hospital and entirely new equipment of X-Ray apparatus will be installed by Dr. Powers so that the hospital will be able to provide patients and the medical profession with all branches of X-Ray service.

Plans for the establishment of a Clinical Laboratory have been completed with Miss Virginia Kelly as technician. The work of the laboratory will be supervised by a Committee consisting of Professor Schultz of the University bacteriological department and Drs. Barnett and Slater of the visiting staff. This laboratory will also by agreement handle all the examinations for the City Health Department. To this end Health Officer Louis Olsen will move his laboratory equipment to the hospital and will meet a portion of the expenses incident to the work.

With regard to alterations, repairs and renovation, under supervision of the University Comptroller, Mr. Roth, the Operating Rooms and the commissary department have been repainted, the range and furnace rebuilt and the alterations necessary to accommodate the X-Ray and laboratory departments carried out. The hospital accordingly starts in excellent condition to meet its first year of University management.

GEORGE BURBANK SOMERS,
Physician-Superintendent.

MEDICINE

The teaching and clinical staff of the department for 1920-21 consisted of: Albion Walter Hewlett (executive), professor; William Fitch Cheney, Harold Phillips Hill, clinical professors; Thomas Addis, Ernest Charles Dickson, Harold Kniest Faber, associate professors; Walter Whitney Boardman, Harry Everett Alderson, Charles Miner Cooper, Walter Frank Schaller, associate clinical professors; W. Edward Chamberlain, Henry Herbert Yerington, assistant professors; George de Forest Barnett, William Redwood Price Clark, Millicent Mary Cosgrave, Thomas George

Inman, Julian Wolfsohn, Henry George Mehrtens, Alfred Cummings Reed, assistant clinical professors; Harry Alphonso Wyckoff, instructor; Clement Harrise Arnold, Joseph H. Catton, Monica Donovan, Norbert J. Gottbrath, Maude Noble Haven, William Kenney, Mary H. Layman, Arthur Aloysius O'Neill, Philip Hale Pierson, Jay Marion Read, Chester Durbin Sewall, Harry Spiro, clinical instructors; Wallace H. Barnes, Alfred H. Ehrenclo, John Graves, James A. Guilfoil, Thomas H. Kelly, Frank A. Kinslow, Frederick W. Kroll, Mary Jones Mentzer, Harry Jeroam Pruett, Alfred A. Robinson, Henry T. Rooney, Hermann Schussler, Jr., John Marshal Tufts, assistants; Adelaide Brown, lecturer on Child Hygiene; Guy Stevens Farrington, lecturer on Speech Defects; Morton Gibbons, lecturer on Medical Aspects of Insurance; Arthur John Ritter, lecturer on Mental Deficiency.

Instruction was given in the medical wards of the Lane and San Francisco Hospitals, in the children's ward of Lane Hospital, in the tuberculosis wards at the San Francisco Hospital, in the Isolation Hospital, in the various out-patient clinics, and in the x-ray department of Lane Hospital.

Instruction in the medical wards of Lane Hospital was given by Doctors Hewlett, Cheney, Addis, Dickson, and Boardman in Medicine, by Doctors Schaller, Inman, and Mehrtens in Neurology, by Dr. Mehrtens in Psychiatry, and by Dr. Alderson in Skin Diseases and Syphilis.

The Medical Service at the San Francisco Hospital was in charge of Dr. H. P. Hill, assisted by Doctors Kenney, Read and Lee. The Tuberculosis Service at the San Francisco Hospital was in charge of Dr. W. R. P. Clark, assisted by Dr. W. E. Glaeser.

The number of admissions during the year to the Medical Clinic Ward (men's) at Lane Hospital was 1532.

The following table gives the number of patients who have been treated in the Out-patient clinics attached to the Medical Department:

Out-Patient Clinic 1920-21	New Patients	Old Patients	Refers and Transfers	Total Visits
Medical.....	1291	6942	258	8188
Children's.....	2035	4752	1755	6800
Skin.....	664	7592	815	9071
Neurological.....	625	7722	482	8819
Mental.....	75	2	0	24
Chest.....	457	1465	356	2027
Dental.....	926	845	0	1771

The following is a partial summary of investigations carried out during the past year by members of the Medical Department:

Dr. Hewlett has been studying the effect of quinidine on cases of auricular fibrillation. He has also completed a statistical study of variations in vital capacity in normal young men based on a series of measurements on students carried out with Mr. Jackson. The relationship to height, weight and body surface, etc., has been determined. He has also reported a case of block in the right branch of the His bundle which showed extra systoles arising in the ventricular system.

Dr. Spiro has constructed an instrument for recording the size of the heart with the orthodiagram, which allows of the construction of a pattern of the heart. He is engaged in making a series of measurements and correlating them with various cardiac abnormalities. A study is being made of the occurrence of resemblances in the form of the heart in members of the same family. Mr. Lewis has completed a study of the cause of the increase in sounds heard with the auscultatory method of blood pressure measurement which follows the administration of adrenalin. The increase in sound was found to be related to the increase in pulse pressure and not to the change in the form of the pulse wave. Dr. Nagel completed a study of the effect of treatment on the Wassermann reaction in a large series of cases. Dr. Shepardson is investigating the subject of syphilis of the stomach. Dr. Read has made a large number of simultaneous measurements of both basal metabolism and of pulse pressure and pulse rate, and in collaboration with Dr. Shepardson is continuing this work especially in cases of hyperthyroidism, with a view of determining to what extent variations in P.P. X P.R. may be taken as indicative of alterations in basal metabolism. Dr. A. C. Reed has been conducting investigations in regard to the diagnosis of amoebic dysentery, especially in connection with methods for distinguishing amoeba from leucocytes. He has also been making comparative observations on various methods of treatment of amoebic dysentery and also of flagellate dysentery. Dr. Barnes is studying the clinical effect of various drugs on the heart.

In the laboratory for the study of metabolic diseases, Dr. Addis, Dr. Drury, Mr. Myers and Mrs. Shevky have been collaborating in a study of the renal function, the urinary sediment, and the clinical manifestations in Bright's disease. During the past year special attention has been directed to methods for determining the maximum concentrating capacity of the kidney, and work has been done on normal individuals in order to define the conditions required for the manifestation of the maximum concentrating capacity. As a result of this work a new test has been developed and applied. Further progress has been made in the collection of data on the variation in the urea excreting capacity in normal individuals required for the establishment of an adequate standard of normality. A special investigation of the effect of thyroxin on the excretion of urea and water and on the urea excreting capacity in rabbits has been completed. The relation between the amount of renal substance and the ratio between the urea in the urine and the blood is at present under investigation, observations being made on rabbits of widely different size and on rabbits before and after removal of one kidney. In the same laboratory Mr. Azevedo is measuring the relation between the concentration of phenolsulphonephthalein in the plasma and the rate of its excretion.

The investigation of botulism in the United States has been continued by Dr. Dickson in collaboration with Dr. Karl Meyer of the George William Hooper Foundation for Medical Research, and Major J. C. Geiger of the U. S. Public Health Service. A preliminary report of the epidemiological investigation has been submitted to the Surgeon General of the U. S. Public Health Service, and the complete report is in process of

preparation. In the Laboratory of Experimental Medicine, Mr. Richard Shevky has completed the initial portion of his study of the action of the toxin of *B. botulinus* upon the nervous system and is now studying the effect of the toxin upon general metabolism. Mrs. Georgina S. Burke, Miss Jean Johnston, Miss Dorothy Beck and Miss Zelda Lindblom are studying the thermal death point of spores of *B. botulinus* and the various factors which affect it, and Miss Lois Park is studying the specificity of the antitoxin for various strains of *B. botulinus*. A preliminary report of the work done by Mr. Shevky has been published in the Proceedings of the Society for Experimental Biology and Medicine.

Dr. Boardman has made a large number of chemical and bacteriological observations on the duodenal contents both in normal and abnormal conditions and is still continuing this work with Mr. Maynard. Mr. Ankele has collected data on the variability of the hydrochloric acid concentration obtained from different parts of the stomach. Dr. Kroll has completed studies on the relation of salt intake to hypertension and at present is studying the association between dental caries and gastric and duodenal ulcer.

Dr. Campbell is making a comparison between radical and conservative methods of tooth extraction in connection with local and systemic injections.

Dr. Pierson has continued and extended his investigations on the effect of sulphur dioxide in experimental tuberculosis, and in addition has been engaged in educational work in the prevention of tuberculosis as chairman of the educational committee of the State Tuberculosis Society.

In the laboratory of clinical pathology in charge of Dr. Wyckoff, work is being carried out on complement fixation in tuberculosis, on the precipitin reaction for the gonococcus, and on the Sachs-George reaction for syphilis. In addition Dr. Wyckoff is working on methods for the unification and simplification of methods for blood analysis.

In the Neurological subdivision Dr. Schaller is continuing anatomical and pathological observations in cases of brain tumor, and cerebral softening by the method of serial sections. A special study of a series of sixteen spinal cord tumors is being made. A clinical and pathological study with Dr. Jean Oliver has been made in a case of lethargic encephalitis. Special work has also been carried on with Dr. Mehrtens in connection with intraspinal therapy. A scheme has been introduced for the systematic study of cases of disturbed sympathetic and endocrine systems. Dr. Mehrtens completed work on the rectal administration of massive doses of arsphenamine (Journal of the American Medical Association, February 26, 1921) and a review of the last five years' results in intraspinal therapy will shortly appear in the Archives of Neurology and Psychiatry. A grant has been received from the U. S. Interdepartmental Social Hygiene Board for the testing out of Tryparsamide which will occupy most of next year. In addition work has been started on the etiology of lumbar puncture headaches and elaboration of methods for their prevention. In conjunction with Dr. Otto Barkan a research has been started with the Pupiloscope to determine the presence of latent syphilis in the Central nervous system.

Dr. A. A. Robinson is continuing in the Clinic the work started in Philadelphia on unusual types of muscular atrophies and Dr. Lucile Williamson's practical application of the Martin method of Muscle testing has been put on a routine footing.

In the subdivision of Pediatrics, Dr. Faber has completed and published his observations with Mr. James on the range and distribution of blood pressures in normal children. In addition studies on the anti-scorbutic action of honey, on sodium citrate and scurvy, and on scurvy following the use of raw certified milk have been finished and published in the Journal of Biological Chemistry, the Proceedings of the Society of Experimental Biology and Medicine and the American Journal of Diseases of Children. In a large number of babies, the spontaneous food intake was measured, and forms the basis for an investigation into the relation between appetite and food requirements in the new born. The results of which were read at the Boston meeting of the American Medical Association. Mr. Flood has made observations on the blood sugar curve following the ingestion of various sugars. Miss Melcher has measured the surface area in new born infants, and Mr. Takayama has studied the reaction to intravenous injection of serum. Dr. Yerington has been making an investigation extending over several years into the comparative value of various methods of treatment of congenital syphilis. Dr. Schussler is continuing work begun in St. Louis on the treatment of syphilis by intravenous injection of bichloride of mercury. He is also working out a method in which relatively large doses of neosalvarsan are combined with mercurial inunctions in the treatment of congenital syphilis.

In the subdivision of Dermatology, Dr. Alderson has been developing a method for the production of immunity to poison-oak with which very promising results have already been obtained. Several investigations are under way in connection with the treatment of syphilis. This work is aided by money appropriated by the Federal government. Special work is being done on the provocative Wassermann and on Wassermann fast cases. In addition there is a continuing study of the etiology of various skin eruptions.

In the department of Roentgenology, Dr. Chamberlain and Dr. Newell have completed and published their work on pelvimetry by means of the roentgen ray, and are engaged in the construction of a new type of X-Ray therapy machine.

The following theses were carried out in the Medical Department:

- De Lancey—The maximum urea concentrating capacity.
- Gifford—A résumé of the children's year.
- Bovard—Auscultation of the pylorus.
- James—Blood pressure in normal children.
- Olsen—The psychic equivalent of epilepsy.
- Pritchard—Metastatic actinomycosis.
- Sampson—Phenolsulphonephthalein excretion by the kidney.
- Thompson—Solid paraffin for sealing anaerobic fluid cultures.
- Yamada—Outward effects after arsphenamine administration.
- Crane—Dermatitis venenata caused by poison oak.
- Newton—Arsphenamine by rectal injection.
- Sebastian—Agglutination properties of the blood.

Shepardson—Provocative Wassermann.

Twombly—Neurasthenic states.

Williamson—Muscular strength in certain cases of paralysis.

Chandler—Hydrogen ion concentration.

Pischel—The neutralization of the toxin of bacillus botulinus.

During the year the Medical Department has met one night every month at dinner. At these meetings the results of the work of the members have been informally presented, and plans and ideas for further work brought forward for discussion and criticism.

ALBION WALTER HEWLETT,
Professor of Medicine.

OBSTETRICS AND GYNECOLOGY

The teaching staff of the past year has consisted of Alfred Baker Spalding, professor; Ludwig Augustus Emge, assistant professor; Henry Walter Gibbons, Frank Robert Girard, Henry Augustus Stephenson, assistant clinical professors; Chester Biven Moore and Karl Ludwig Schaupp, clinical instructors; William E. Stevens, lecturer; and Harry E. Clay, Lewis Michelson, Arthur Lee Munger and Albert Victor Pettit, assistants. Drs. H. L. Franklin, D. C. Long, P. F. McMurdo and R. Pollart assisted in the Women's Clinic as special workers.

There has been a decided increase in laboratory research during the past year. Dr. L. A. Emge with the coöperation of several students has finished a series of five separate investigations on the activity of benzylbenzoate. He also has finished a study on mitochondria of the amnion. The laboratory investigations have also been very fruitful in stimulating a number of students to undertake the investigation of smaller problems under supervision.

During the past year the following papers have been published: "Eclampsia with 70 Convulsions; recovery" by Dr. A. B. Spalding; "The Effect of Benzyl-Benzoate on the Leucocytes of the Rabbit", "Varicose Veins of the Female Pelvis" and "A Cytological Study of the Kidney Cells in Long Continued Hyperfunction with Relation of Hypertrophy and the Mitochondrial Apparatus" by Dr. L. A. Emge; "Infections of the Female Urethra" by Dr. C. B. Moore.

The following papers are in print, "Prolapse of the Uterus with Rectocele and Cystocele; and End Results of Various Operations" by Dr. Spalding; "Study of the Mitochondria in the Human Amnion" and "Biological Factors of Benzyl Benzoate Therapy" by Dr. Emge; "Ovarian Autotransplantations" by Dr. Girard and "Treatment of the Infected and Lacerated Cervix Uteri" by Dr. Pettit.

The following papers are ready for the press: "Immediate Trachelorrhaphy" and "The Effect of Benzyl Benzoate on Antibody Formation" by Dr. Emge; "The Relation of Benzyl Benzoate to the Urinary Phenols" by Mr. J. P. Jensen and "Adenoma of the Appendix" by Mr. C. B. Cowan.

The department was represented at the meeting of the California State Medical Society by Drs. Spalding, Emge, Girard and Pettit who presented clinical papers.

The following students have completed their theses for this department: "The Incident of a Positive Wassermann Reaction in 750 cases of Pregnancy," by G. I. Dawson; "The Significance of the Blood Picture in Ectopic Pregnancy", by E. A. Schaper; "Morbidity and Mortality of Operative Treatment of Incomplete Abortion", by R. O. Bullis; "Pathology in Forty-two cases of Dysmenorrhoea", by J. H. Jackson; "An Experimental Study of the Urinary Phenols in the Rabbit after Benzyl-Benzoate Therapy (administration)", by J. P. Jensen; "The Influence of Foreign Substances on the Production of Antibodies of Rabbits", by Miss E. M. Leonard; "Carcinoma of the Cervix", by W. F. Swett.

As in other years the wards in Lane Hospital have been under the direct supervision of Dr. Spalding for the greater part of the year and of Dr. Emge for the summer quarter. This work has been greatly facilitated by the resident who is directly responsible for the junior staff.

The first Resident in Obstetrics and Gynecology has completed his term of service and we can report that the residency in this division has given general satisfaction. The constant supervision of the junior staff by a trained house officer has lead to a quality of work in the wards which we consider superior to that of past years. Also, we consider that the three years of hospital experience gives to the residency an invaluable opportunity for the proper training in the specialties of obstetrics and gynecology. The holder of the residency for the past year, Dr. A. V. Pettit, will remain with the department as instructor. The senior interne of last year, Dr. Hans von Geldern, will take his place as resident.

With the growth of our immediate staff the necessity for greater hospital facilities for the training of advanced internes presents itself again and again. We are, therefore, looking forward with great hope to a larger endowment for free beds as well as for funds to erect a Women's Hospital devoted exclusively to obstetrics and gynecology.

The number of admissions to the Gynecological Ward has been decreased somewhat and on careful investigation we have found that the fault lies with an inadequate provision for free beds or partially free beds. The number of patients in the clinic is satisfactory but the economic changes of the present time force a great number to go to the free hospitals. In this way a large proportion of the best part of our teaching clinic is lost to our students.

This condition has made itself still more evident in the Obstetrical Ward. By following up our patients we have found that a great number are diverted to the San Francisco Hospital as well as to other hospitals where the number of free beds is greater than in Lane Hospital.

Our Outpatient Obstetrical Department has increased during the year to 70 home confinements as against 9 for the last year. Nevertheless, we shall continue to lose a certain number of our clinic patients for teaching because many will prefer to be attended in a free hospital rather than be confined at home.

Our division has continued to hold monthly meetings and all have derived a great deal of mutual benefit from the clinical and divisional discussions. The most important topic of our last meetings has been the better utilization of the San Francisco Hospital for teaching.

Dr. Gibbons and Dr. Clay have been in the Gynecological Ward at the San Francisco Hospital while Dr. Schaupp and Dr. Munger have supervised the Obstetrical Ward.

In the Women's Clinic, 6813 patients have been treated. In the Gynecological Ward at Lane Hospital 322 patients have been treated and in the Obstetrical Ward 282 have been cared for. In the Gynecological Ward at San Francisco Hospital 250 have been taken care of, and in the Obstetrical Ward 228 have been attended. In the laboratory for the Division of Obstetrics and Gynecology 837 specimens have been studied.

Dr. Arthur Nobbs has interested himself in the prenatal clinic, giving care to the teeth of patients during pregnancy; a subject which has been greatly neglected heretofore.

Miss E. Wing, technician for the past seven years, resigned to assume charge of the laboratories of the St. Vincent's Hospital in Los Angeles and her duties have been carried on by Miss G. Boyer. Miss M. Greninger has continued as secretary to the division and in addition to her regular duties has given much help to the Social Service Department. Much interest has been taken in the clinic and volunteer aid given as clinical clerks by Mrs. Clement Arnold, Mrs. W. D. Clark, Mrs. Louis Gordon, Miss V. Lilienthal, Miss A. McIntosh, Mrs. Perry, Mrs. George Pinckard, Mrs. M. R. Robbins and Mrs. Henry Wolff.

ALFRED BAKER SPALDING,

Professor of Obstetrics and Gynecology.

PATHOLOGY

The personnel of this department was made up of William Ophüls, professor; Jean Redman Oliver, associate professor; Miss E. M. Douglas and George Stevens, technical assistants.

Dr. Ophüls published a monograph on arteriosclerosis and delivered the Noble Wiley Jones lectures at the Medical School of the University of Oregon.

Mr. Yamada completed his thesis on ill effects following arsphenamine administration and Mr. Christerson his thesis on the mitochondria of regenerating cells in the kidney. Mr. McKenzie began a thesis on the effect of vital dyes on the functional activity of the kidney.

Dr. Yoshu Fukuda has been engaged in a functional and anatomical study on the excretion of hemoglobin by the kidney.

Dr. Oliver continued his work on the pathology of bronchial asthma, and completed a study on spontaneous meningoencephalitis in rabbits and an anatomical study of a case of chronic lethargic encephalitis, the latter with Dr. Schaller. An article on the mechanism of urea secretion was published by him.

Dr. Oliver, Miss Douglas, and Mr. Yamada have been studying certain biological reactions of arsphenamine. Three articles have been completed by them as follows:

I. The Mechanism of its Agglutinative Action on Red Blood Cells in vitro.

II. The Protective Action of Hydrophilic Colloids on the Agglutination of Red Blood Cells by Arsphenamine.

III. The Immediate Toxicity of Arsphenamine as Contrasted with late ill Effects and the Role of Agglutination in the Production of the Former.

The number of autopsies this year was 135. The opposition of some of the undertakers to autopsies continued, but towards the end of the year a better understanding was reached which promises well for the future.

The number of pathological and bacteriological specimens examined in the laboratory amounted to 714.

WILLIAM OPHÜLS,
Professor of Pathology.

PHARMACOLOGY

During the present year the teaching in the Department of Pharmacology was done by Dr. Albert C. Crawford, professor, and Mr. Zeno Ostenberg, instructor.

Dr. Crawford continued his observations on the physiological effects of testicular extract.

Dr. Crawford died of pneumonia on March 14, 1921. His work was continued and finished by Mr. Zeno Ostenberg, A.B., A.M. Stanford, who had been an assistant in Dr. Crawford's laboratory some years ago.

ZENO OSTENBERG,
Instructor in Pharmacology.

SURGERY

The teaching and clinical staff of the division for the year 1920-21, was as follows: Stanley Stillman, Emmet Rixford, professors; Rufus Lee Rigdon, Albert Brown McKee, Edward Cecil Sewall, clinical professors; Leonard Wheeler Ely, Frank Ellsworth Blaisdell and John Francis Cowan, associate professors; Leo Eloesser, Harrington Bidwell Graham, Harvard Young McNaught and Melville E. Rumwell, associate clinical professors; Hans Barkan, Philip Kingsworth Gilman, Harry Leslie Langnecker, John A. Bacher, assistant clinical professors; Edward Bancroft Towne, instructor; H. Alexander Brown, James Root Dillon, Ross Wallace Harbaugh, Harold Augustus Fletcher, Caroline B. Palmer, Otis Allen Sharpe, Roderic O'Connor, and Chester Howard Woolsey, clinical instructors; John Robert Burrows, Edmund Butler, Hubert W. Dudley, Josiah H. Kirk, Harold Staats Moore, H. O. von der Leith, John P. Strickler, Frederic L. Wright, Otto Barkan, assistants; Sterling Bunnell, Henry A. Ryfkogel, Burt S. Stevens, (Surgery), George W. Hartman, (Genito-Urinary Surgery); Cullen F. Welty, (Otology, Rhinology and Laryngology), Alfred J. Zobel, (Proctology), lecturers; and Nicholas Jacobs, (Surgery), assistant lecturer.

Instruction in general surgery in the Out-patient clinic and at Lane Hospital has been given by Drs. Stillman, Cowan, Blaisdell, Gilman, Rumwell and Towne.

Instruction in general surgery at the San Francisco Hospital has been given by Drs. Rixford, Eloesser, Harbaugh and Butler.

The Out-patient Surgical Clinic has been under the supervision of Dr. M. E. Rumwell, assisted by Drs. E. B. Towne, H. O. von der Leith, John P. Strickler, and W. C. Hobby and Mrs. Gertrude J. Dixon, clerk of clinic.

The total number of visits to this clinic was 6672, of which 799 were made by new patients (including refers and transfers) and 5178 by old patients. Two hundred and four patients were transferred to Lane Hospital and 81 to the surgical service at the San Francisco Hospital.

The new operating room of the Out-patient Clinic has been completed and with the installation of a nitrous-oxide anaesthesia apparatus, the clinic staff is able to perform minor surgical operations which were formerly sent to the hospital.

During the year, 433 operations were performed by members of the Dispensary Staff in the clinic operating rooms of Stanford Hospital.

In the Genito-Urinary clinic, the teaching and clinical work have been under the supervision of Dr. R. L. Rigdon with Dr. James R. Dillon, chief of clinic, assisted by Dr. Chester H. Woolsey and Dr. Lloyd R. Reynolds; Mr. B. F. Jones, technical assistant; and Mrs. R. S. Northrup, clerk of clinic.

The total number of visits to the clinic during the year was 10823. Of these 9851 were by old patients, 588 by new patients (including refers and transfers). Ninety-three patients were transferred to Lane Hospital and 36 to San Francisco Hospital. One hundred and eight operations were performed by members of the Dispensary Staff and 40 by members of the San Francisco Hospital Staff.

During a recent trip east, Dr. Dillon found that the routine work of the Stanford Genito-Urinary Clinic compared very favorably with that done in the best of the Eastern Clinics and in some instances was superior. The attention given here to the large amount of routine work has interfered with the time required for detailed study of special cases and it is hoped this may be overcome by securing more assistants. Dr. Woolsey has been the only assistant to Dr. Dillon until July of this year, when Dr. Reynolds was added to the staff. No pyelography in the Out-patient department has been done, because of the lack of X-Ray equipment in the Dispensary and the difficulty in reaching the X-Ray Department in Stanford Hospital. A new up-to-date cystoscopic table would greatly facilitate the cystoscopic work. An increase in the free bed allowance is greatly needed, in order to facilitate hospital study of interesting cases.

In Ophthalmology, the clinic has been under the supervision of Dr. Albert B. McKee, assisted by Drs. Hans Barkan, O. A. Sharpe, H. W. Dudley, Roderic O'Connor, Otto Barkan and Mr. J. H. Brunnings, optician.

The total number of visits by old patients was 3828, the number of new patients 1016; of referred and transferred patients 771. Thirty-eight patients were sent to Lane Hospital and 11 patients to San Francisco Hospital.

In Otolaryngology, the clinic and instruction have been under the supervision of Dr. Edward Cecil Sewall, Dr. John A. Bacher, chief of clinic, assisted by Drs. Rea E. Ashley, Josiah H. Kirk, Harvard Y. McNaught, Harold Staats Moore, Merton J. Price and Miss Elsie Cook, clerk of clinic. Miss Elizabeth R. Poindexter and Miss Coralie N. Kentfield are in charge of the Lip Reading Clinic for Adults.

The total number of visits to the clinic during the year was 10822, of which 7712 were made by old patients, 1377 by new patients and 1733 by referred and transferred patients. 1010 operations were performed in the Dispensary and 603 were performed in Stanford Hospital.

In Orthopaedic Surgery, the clinic work and instruction have been under the supervision of Dr. Leonard W. Ely, assisted by Dr. Arthur L. Fisher. Dr. H. L. Langnecker has been in charge of the postural work. Miss Helen C. Wallach has been clerical and technical assistant in the laboratory. Her work in the laboratory has facilitated the scientific investigation of the subdivision. The total number of visits to the clinic was 3158 of which 962 were made by new patients, (including refers and transfers) and 2194 by old patients.

Dr. Ely has continued his studies on his "Second Great Type of Chronic Arthritis" and upon the healing of experimental fractures. His new book on "Inflammation in Bones and Joints" is at present in the hands of the publisher.

The great need of the clinic is a brace shop, such as is maintained by many of the orthopaedic clinics in the Eastern States. These brace shops furnish braces at cost to clinic patients, and are supported by the sale of braces to pay patients. At the present scale of prices the purchase of necessary apparatus by dispensary patients often entails a decided hardship.

In the Laboratory of Surgical Pathology, the work has been conducted by Dr. F. E. Blaisdell with Mr. John Kratsch, technical assistant.

During the year, 300 specimens of tissue from the operating rooms of the hospital and college clinics have been examined.

The following papers have been published by members of the division:

Dr. Emmet Rixford: *Mechanics of Production and Treatment of Spiral Fractures of the Long Bones.*

Dr. E. B. Towne published an article on the Pituitary Body in *Nelson's Loose-Leaf Medicine.*

Dr. R. L. Rigdon: *Treatment of Bladder Tumors by Radiation and Fulguration.*

Dr. J. R. Dillon: *Urinary Incontinence and its Operative Repair.*

Dr. Otis Allen Sharpe: *Radium for Cataract.*

Dr. F. E. Blaisdell has completed his work on "The Structure of the Parametrium and Pelvic Fascia at Different Ages," and "An Experimental Study of Fracture of the Tibial Spine."

Dr. René Pollart completed his thesis for the A. M., degree, "A Study of the Great Omentum in Health and Disease."

Several of the senior students are doing experimental work in the laboratory in preparation of their theses; Mr. Frank E. Blaisdell, Jr. is studying the "Changes in Smooth Muscle following Physiological Rest with Blood and Nerve Supply Intact"; and Mr. Cordes W. Ankele is making "An Experimental Study of the Uses of Free and Pedunculated Fascial Flaps in Surgery."

The following experimental work has been carried on in the laboratory during the year:

Dr. S. L. Haas: "Healing of Fractures in Transplanted Bone." A preliminary report of this work has been completed and has been accepted for publication.

Drs. F. E. Blaisdell, Sr. and J. F. Cowan; Experimental Study of Green-stick Fractures.

Dr. Leonard W. Ely: Studies in Buried Bone.

Drs. H. L. Franklin and J. G. Bartholomew: An Experimental Study to Determine the Permanent Results of Closure of the Pylorus following Gastro-jejunostomy.

Dr. E. B. Towne has completed the following studies: "Proliferation of Cranial Bones Resulting from Invasion by the so-Called Dural Endothelioma," and "The Study of three cases of Obstructive Hydrocephalus Diagnosed and Treated by Dandy's Methods."

STANLEY STILLMAN,
Professor of Surgery.

MILITARY SCIENCE AND TACTICS

Progress has been made during the past year in the growth and development of this department. The Field Artillery R. O. T. C. Unit has exceeded throughout the year in the number of its students the minimum requirement of one hundred set by the War Department. The enrolment at the beginning of the autumn quarter was 110, at the beginning of the winter quarter 123, and at the close of the spring quarter 108. The Infantry Unit with its enrolment of 54 was discontinued after the autumn quarter, resulting in a concentration of effort on the Field Artillery Unit, for which work I believe, after two years of observation of this as compared with other universities, Stanford is best adapted of all American universities. Only two outdoor classes in practical work had to be omitted because of inclement weather, a record in this respect.

A high standard has been maintained in all classes, and due to the interest and enthusiasm of the students, the number of failures has been surprisingly low. Much effort has been expended during the past year to awaken a general interest in the faculty and student body in the work and aims of the department. The result has been gratifying, and I believe that the military course occupies a higher place in Stanford life than ever before.

Forty-two students left for the six weeks' R. O. T. C. camp at Camp Knox, Ky., on June 16, 1921. The successful camp of last year which sixteen Stanford men attended did much to awaken interest in this phase of the course. Polo has been played three times a week throughout the year, and a marked improvement has been noticeable since last year. An average of sixteen men, or four teams, have been playing. Two trips were made by the polo men: one to the tournament at Del Monte during the spring vacation, and one to San Mateo later in the year. It is recommended that polo be made a minor sport in the University. Proper request will be made to the Board of Athletic Control to this effect. A second field is being laid out near the new stadium.

Until new permanent buildings become necessary, the appearance and life of the present temporary buildings would be greatly improved by painting, and it is recommended that this be done. A building containing offices and store-rooms is needed now so that the Physical Training department may have the use of the rooms in the gymnasium at present used for these purposes. The new building should be located as near the Quadrangle as possible.

The one thing which stands most in the way of a larger and better unit is the lack of time in the schedule of all engineering students. Both the lower division and engineering courses require from 16 to 18 hours per quarter to complete. This, due to the faculty prohibition of more than 18 hours, is equivalent to prohibiting such men from taking the field artillery course with its 3 hours theoretical and 3 hours practical course. I recommend that such credit be given men in any course who elect to take field artillery that they may stay within the 18 hours and still get their degrees in four years. The method used at the University of Utah is to allow the substitution of field artillery for any other three hour subject in any course.

The following changes in personnel occurred during the year:

Relieved from duty: Major Howard Eager, Field Art., August 23, 1920; Major S. A. Howard, Inf., October 30, 1920; Lieut. W. G. Bingham, Inf., January 15, 1921.

Detailed: Capt. R. H. Power, Rtd., December 2, 1920; Capt. C. E. Boyle, Field Art., September 10, 1920; Capt. H. A. Cooney, Field Art., October 12, 1920.

Six students satisfactorily completed the requirements of the advanced course and were recommended for commissions as second lieutenants—two for the Field Artillery Section and four for the Infantry Section, Officers' Reserve Corps.

There are no courses during the summer quarter.

LEROY PIERCE COLLINS,
Major, Field Artillery, (D. O. L.)
Professor of Military Science & Tactics.

MINING AND METALLURGY

The faculty of this department for its second year consisted of Professors Theodore Jesse Hoover and James MacDonald Hyde, Associate Professors Waldemar Fenn Dietrich and John Elbert Elliott, Assistant Kinnison Swett Boynton, and Lecturers William Hillman Shockley, Louis David Mills, and Welton Joseph Crook.

The registration of graduate students in the department was sixteen, twelve of whom were Stanford men and four students from other institutions,—Paul Frederick Boswell, University of South Carolina; Paul Francis Kerr, Occidental College; Arthur John Mason, Jr., Cornell University; Julien Raick, University of Liege.

The degree of Engineer in Metallurgy was granted to Herschel Livingston Driver, being the first degree of Engineer granted for full two years of graduate work.

Two fellowships totaling \$1200 were maintained by gifts, the recipients being Herschel L. Driver and Charles Arthur Dobbel.

Research work on the breaking down of oil field emulsions has continued throughout the year with encouraging results under the guidance of Professor Hoover, and by the active work of Mr. Harold Valby Dodd. This work will continue.

Research work on Wood Distillation has continued throughout the year under the guidance of Professor Hoover and by the active work of Mr. John Alfred Potter, Jr. This work will be discontinued because the research has revealed a negative answer to the question propounded. Research work on the time study of laboratory operations was begun by Associate Professor Dietrich and has been carried on throughout the year with interesting and important results bearing on laboratory instruction. Professor Hyde is now applying the same methods originated by Professor Dietrich.

THEODORE JESSE HOOVER,
Professor of Mining and Metallurgy.

PHILOSOPHY

The regular departmental faculty for the year 1920-21 consisted of the following: Henry Waldgrave Stuart, professor, and Harold Chapman Brown, associate professor. During the summer quarter Professor Herbert Leslie Stewart of Dalhousie University, Halifax, N. S. was in residence as acting professor, giving two courses in the philosophy of the nineteenth century. The total enrolment in all courses for the year was 550.

Professor Brown has been carrying forward during the year his work on the philosophical interpretation of characteristic results in modern science and offered a seminary course in the spring quarter on the philosophical aspects of biological evolution. Professor Stuart in the winter quarter offered a seminary course in ethical theory in which individual studies were carried on bearing upon the problem of ethical method and the ethical implications and content of contemporary realism.

HENRY WALDGRAVE STUART,
Professor of Philosophy.

PHYSICAL EDUCATION FOR MEN

ENCINA GYMNASIUM

The Departmental Staff for the year consisted of the following:
Alfred David Browne

Associate Professor of Physical Education and Medical Adviser
Administration of Department
Public Health Officer
Lectures in Public Health and Hygiene
Lectures in Aid to Injured

- Executive Member of Board of Athletic Control
 Chairman of Faculty Athletic Committee
 Harry Wilfred Maloney
 Director of Minor Sports
 Instructor in Rugby, Soccer, Boxing, Wrestling and Fencing
 Ernst Brandsten
 Director of Aquatics
 Instructor in Swimming, Diving and Water Polo
 Walter D. Powell
 Director of Major Intercollegiate Athletics
 Instructor in Football and Basket Ball
 Charles S. Botsford
 Director of Intramural Athletics
 Organization and Instruction of Intramural Athletics
 Instructor Gymnastics, Volley ball and Hand ball
 Wellford D. Seay
 Associate Director Major Intercollegiate Athletics
 Instructor Football, Base ball and Basket ball
 C. E. Templeton
 Assistant Director Major Intercollegiate Athletics
 Instructor of Track and Field Athletics
 E. W. Moulton
 Assistant Major Intercollegiate Athletics
 N. A. Moore, Store-room Attendant

The registration of the Department for the year was as follows:

The following is a report of the registration of the men students reporting for physical training at least three one-hour periods each week and those attending for informal exercises:

	Fall Term	Winter Term	Spring Term
Gymnastics	134	127	131
Handball	59	97	101
Fencing	12	14	16
Wrestling	54	49	33
Boxing	162	93	71
Rugby	45	.....	25
Soccer	83	36	36
Tennis	57	22	40
Golf	17	.....	12
Baseball—Varsity and Freshmen.....	35	31	68
Baseball—Intramural .....	.....	250	252
Volley-ball .....	.....	36	36
Swimming	264	222	222
American Football—Varsity	50	.....	50
American Football—Freshmen.....	37	.....	.....
Cross Country Running.....	34	.....	.....
Track	92	256	306
Informal Exercise.....	237	.....	.....
Basketball—Varsity .....	.....	18	.....
Basketball—Freshmen .....	.....	20	.....
Faculty	26	26	26
	<hr/> 1400	<hr/> 1297	<hr/> 1415

Average total male enrolment.....	1917
Average graduates and excused by disability.....	417
Possible student enrolment in Physical Training.....	1500
Average enrolment in Physical Training.....	1334
Average of men not registered in Physical Training.....	166

Physical Training Attendance Report—Summer Term—1921

Handball	49
Tennis	66
Gymnastics	27
Soccer	14
Track and field events.....	33
Swimming	193
Total.....	382

Comparison by academic years is as follows:

	Fall Term	Winter Term	Spring Term
1919-20	981	882	747
1920-21	1400	1297	1415
Increase over 1919-20.....	419	415	668

The daily average attendance during the year was about 600.

No changes in policy were inaugurated but the plans laid down during the previous year, especially in the development of the intramural program, were matured.

The great increase in the physical training enrolment during the past year and the many diversified duties in connection with the medical adviser's office, physical education and athletics, made it necessary to recommend that a change in organization be made for the year 1921-22. This change, which was approved by the President, will allow more individual attention to be given to students in matters of health supervision.

The following plan will be followed:

Each student will be given a medical examination. Instruction will be given in the form of advice based upon the examination. The student's attention will be called to any condition that may, with proper treatment, improve his health. Should medical or surgical attention be necessary, in the opinion of the adviser, he is notified and the department will endeavor to assist by coöperation with the student and his physician in correcting the defect.

No candidate for any of the athletic teams may begin training until approved by the Medical Adviser.

Emergency treatment is the only treatment attempted.

The various activities in the Intramural Division have been placed on a more orderly and substantial basis during the past year under the splendid leadership of Mr. Botsford; and students have been engaged in the management of the teams and of the sports.

The following table showing the number of teams, games, and contestants in each sport is presented:

INTRAMURAL ATHLETICS

Activity	Series	No. of Teams	No. of Games	No. of Contestants
Basketball	Interclass	4	12	40
Basketball	Interorganization	48	336	336
Baseball	Interorganization	40	200	440
Track	Interorganization	12	60	300
Track Relay	Interorganization	12	36	144
Soccer	Interorganization	6	30	66
Tennis	Open (Singles)	1	32	40
Tennis	Open Elimination Tournament	1	38	80
Tennis	Hastings	1	32	65
Tennis	Wright & Ditson	1	38	70
Cross Country	Interclass	4	1	60
Handball—Fall	Open (Singles)	1	24	48
Handball—Fall	Open (Doubles)	1	16	24
Handball	Open (Singles)	1	18	30
Handball—Spring	Singles	1	12	24
Handball—Spring	Doubles	1	24	40
Wrestling	Interclass	4	20	20
Boxing	Interclass	4	24	20
Volley-ball	Interclass	3	5	30
Volley-ball	Open	3	5	18
Gymnastics	Open	--	6	15
Water Polo	Interorganization	14	13	70
Swimming	Interclass	4	3	50
		167	915	2,030

INTRAMURAL BASKETBALL

FINAL STANDING OF THE LEAGUES

League No. 1				League No. 2			
	W.	L.	Pct.		W.	L.	Pct.
Breakers	5	0	1.000	Phi Gamma Delta	5	1	.900
Alpha Kappa Lambda	4	1	.800	Sigma Nu	4	2	.720
Sequoia Third	3	2	.600	Japanese Club	3	2	.600
Alpha Sigma Phi	3	2	.600	Theta Chi	3	2	.600
Entre Nous	1	4	.200	Sigma Alpha Epsilon	1	4	.200
Encina West First	0	5	.000	Encina West Second	0	5	.000
League No. 3				League No. 4			
	W.	L.	Pct.		W.	L.	Pct.
Chi Psi	5	0	1.000	Alpha Delta Phi	5	0	1.000
El Campo	3	2	.600	Alpha Tau Omega	4	1	.800
Sequoia Second	2	3	.400	El Toro	3	2	.600
Zeta Psi	2	3	.400	Encina West Third	2	3	.400
Theta Xi	1	4	.200	Delta Tau Delta	1	4	.200
Sequoia First and Fourth	0	5	.000	Theta Delta Chi	0	5	.000
League No. 5							
	W.	L.	Pct.				
Delta Upsilon	5	0	1.000				
Sigma Chi	4	1	.800				
Phi Kappa Psi	3	2	.600				
Encina East Fifth	1	4	.200				
Encina West Fifth	1	4	.200				
Encina West Fourth	0	5	.000				

INTRAMURAL BASKETBALL SUMMARY

Schedule commenced two weeks before the close of the autumn quarter. Schedule closed two weeks before the close of the winter quarter. Series consisted of eight leagues. Winner of each league as follows:

League 1.....	Breakers
League 2.....	Phi Gamma Delta
League 3.....	Chi Psi
League 4.....	Alpha Delta Phi
League 5.....	Delta Upsilon
League 6.....	Phi Delta Theta
League 7.....	Medics
League 8.....	Kappa Sigma

Champion and second place of Championship League:

Won by.....	Alpha Delta Phi
Second.....	Phi Delta Theta

Percentage of the Championship League:

Team	W.	L.	Pct.
Alpha Delta Phi.....	7	1	.875
Phi Delta Theta.....	6	2	.750
Delta Upsilon.....	5	2	.714
Breakers.....	4	3	.571
Chi Psi.....	3	4	.428
Medics.....	3	4	.428
Kappa Sigma.....	0	7	.000
Phi Gamma Delta.....	0	7	.000

Championship series Intramural Baseball—Won by Phi Delta Theta Fraternity.

Final standing of the championship league is as follows:

	W.	L.	Pct.
Phi Delta Theta.....	4	0	1.000
Kappa Sigma.....	3	1	.800
Breakers.....	2	2	.500
El Cuadro.....	1	3	.200
Alpha Chi Sigma.....	0	4	.000

INTRAMURAL BOXING CHAMPIONSHIP

M. Hodges.....	118 lbs.
B. Brown.....	128 lbs.
G. Hensold.....	138 lbs.
J. Hurley.....	138 lbs.
H. Stuart.....	148 lbs.
M. Evans.....	158 lbs.
G. Van Clief.....	175 lbs.
Bas Cox.....	Heavy

Results of Individual Intramural Track Meet—100 yards. Held Monday, May 23, 1921:

First Heat

1. W. E. Wright, Theta Chi.....	10:4
2. Frank Dinfley, Zeta Psi.....	
3. E. W. Breidenback, Phi Kappa Sigma.....	

Second Heat

1. Glen Hartranft, Kappa Sigma.....	10:3
2. H. Nelson, Encina.....	
3. T. E. Colvin, El Capitan.....	

Final

- | | |
|-------------------------------------|------|
| 1. Glen Hartranft, Kappa Sigma..... | 10:2 |
| 2. T. E. Colvin, El Capitan..... | |
| 3. W. E. Wright, Theta Chi..... | |

FINAL SCORES—INTRAMURAL TRACK

1. Breakers	24,339.0
2. Encina	22,979.6
3. Sequoia	21,849.0
4. Theta Chi	21,121.2
5. Phi Kappa Sigma	18,885.6
6. Theta Xi	17,741.0

The relay was won by Theta Xi.

Results of the Broad Jump—Individual Competition—held May 24, 1921:

Koehler, M.....	Encina	Best jump, 19' 6"
Hartranft, G.....	Kappa Sigma	Best jump, 18' 11"
Dake, I. C.....	Kappa Sigma	Best jump, 18' 5"
Neer, J.....	El Cuadro	Best jump, 18' 5½"
Nelson, A. H.....	Encina	Best jump, 18' 2"
Moore, R. S.....	Alpha Sigma Phi	Best jump, 17' 4"
Waterman.....	Off Campus	Best jump, 20' 2"
1—Waterman.....	Off Campus	20' 2"
2—Koehler, M.....	Encina	19' 6"
3—Hartranft, G.....	Kappa Sigma	18' 11"

Results of the Shot Put—Individual Competition—held May 24, 1921:

Hartranft, G.....	Kappa Sigma	Best put, 12-lb. shot, 49' 1"
Henderson.....	Encina	Best put, 12-lb. shot, 38' 6"
Neer, Jacie.....	El Cuadro	Best put, 12-lb. shot, 38' 0"
Mills.....	El Cuadro	Best put, 12-lb. shot, 36' 10"
Dake.....	Kappa Sigma	Best put, 12-lb. shot, 37' 7"

RESULTS OF INTRAMURAL TRACK

Manner of division of points:

Running Broad Jump:

27' 7¼" = 1000 Points
11' 7¼" = 0.8 Points

100 Yard Dash:

9 4/5 sec. = 1000 Points
14 3/5 sec. = 00 Points

One Mile Run:

4 min. 17 4/5 sec. = 1000 Points
7 min. 36 sec. = 00 Points

120 Yard Low Hurdles:

12 3/5 sec. = 1000 Points
19 1/5 sec. = 10 Points

Putting 16 Pound Shot:

47' 0" = 1000 Points
26 2' = 00 Points

The following is the number of intercollegiate contests held during the year and the number of teams representing the University:

Sport	No. of Teams	No. of Games
Football.....	Varsity	8
Football.....	Freshmen	5
Football.....	Second Varsity	2
Basketball.....	Varsity	18
Basketball.....	Freshmen	8
Basketball.....	135 lb.	6
Baseball.....	Varsity	20
Baseball.....	Freshmen	14
Track.....	Varsity	7
Track.....	Freshmen	3
Tennis.....	Varsity	30
Tennis.....	Freshmen	2
Swimming.....	Varsity	2
Swimming.....	Freshmen	4
Water Polo.....	Varsity	3
Water Polo.....	Freshmen	4
Rugby.....	Varsity	1
Soccer.....	Varsity	9
Soccer.....	Freshmen	5
Boxing.....	Varsity	3
Boxing.....	Freshmen	1
Handball.....	Varsity	6
Fencing.....	Varsity	4
Cross Country.....	Varsity	1
Wrestling.....	Varsity	2
Volley-ball.....	Varsity	2
Wrestling.....	Freshmen	1
Golf.....	Varsity	2
Totals—16	28	173

REPORT OF VARSITY AND FRESHMEN GAMES

Football—Varsity

St. Mary's	0	Stanford.. 41	Santa Clara	7	Stanford.. 21
Olympic Club	10	Stanford.. 7	U. of Oregon.....	0	Stanford.. 10
U. S. C.	10	Stanford.. 0	U. of Washington..	0	Stanford.. 3
U. of California....	38	Stanford.. 0			

Football—Freshmen

U. S. Marines	17	Stanford.. 7	Davis Farm	13	Stanford.. 7
U. S. S. Boston.....	7	Stanford.. 13	U. S. C. Frosh	35	Stanford.. 0
U. of C. Frosh.....	35	Stanford.. 7			

Soccer—Varsity

Chinese "Y"	0	Stanford.. 1	U. of California....	1	Stanford.. 1
Columbia Club	0	Stanford.. 5	U. of California....	0	Stanford.. 2
Italia Vertus	0	Stanford.. 3	Italia Club	0	Stanford.. 1
Olympic Club	2	Stanford.. 5	Olympic Club	0	Stanford.. 0
Chinese "Y"	0	Stanford.. 10			

Soccer—Freshmen

U. of C. Frosh.....	3	Stanford.. 3	San Mateo High....	1	Stanford.. 3
U. of C. Frosh.....	6	Stanford.. 0	U. of C. Frosh.....	4	Stanford.. 0
San Mateo High....	1	Stanford.. 1			

Cross Country—Varsity

U. of C. vs. Stanford

Won by U. of C.

Basketball—Varsity

Olympic Club	34	Stanford..	39	U. of Wash.	14	Stanford..	38
Olympic Club	34	Stanford..	42	U. of Wash.	22	Stanford..	30
Santa Clara	13	Stanford..	23	U. of Wash.	23	Stanford..	25
St. Mary's	9	Stanford..	53	U. of Wash.	17	Stanford..	16
C. of Pacific	13	Stanford..	30	U. S. C.	37	Stanford..	42
U. S. C.	14	Stanford..	34	U. S. C.	20	Stanford..	36
St. Ignatius	18	Stanford..	31	U. of C.	30	Stanford..	24
O. A. C.	19	Stanford..	32	U. of C.	25	Stanford..	30
O. A. C.	25	Stanford..	33	U. of C.	21	Stanford..	25

Basketball—Freshmen

U. of C. Frosh.....	37	Stanford..	21	U. of C. Frosh.....	42	Stanford..	17
Oakland High	25	Stanford..	29	Salinas High	15	Stanford..	32
Commerce High ...	7	Stanford..	24	Palo Alto High ...	10	Stanford..	42
University High ...	13	Stanford..	28	Berkeley High	23	Stanford..	27

Basketball—135-lb. Team

Redwood City	6	Stanford..	32	U. of C.	20	Stanford..	30
Palo Alto High	17	Stanford..	23	Redwood H. Alumni	16	Stanford..	37
		U. of C.	21	Stanford..	38		

Rugby—Varsity

U. of C.	0	Stanford..	0
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Handball—Varsity

S. F. "Y"	21	Stanford..	10	U. of C.	vs.	Stanford..	13
S. F. "Y"	21	Stanford..	15	San Jose "Y"	21	Stanford..	13
*San Jose "Y"	vs.	Stanford..		San Jose "Y"	21	Stanford..	19

Volley-Ball—Varsity

Community Center ..	7	Stanford..	15	Peninsula Club ...	5	Stanford..	15
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Baseball—Varsity

Am. Leg'n W.F. 40..	3	Stanford..	17	S. F. Seals.....	23	Stanford..	2
Ft. McDowell	4	Stanford..	10	S. F. Seals.....	7	Stanford..	2
Olympic Club	6	Stanford..	1	St. Mary's	7	Stanford..	5
Ireland's Ind.	2	Stanford..	6	Calgary Club	5	Stanford..	4
Ireland's Ind.	1	Stanford..	2	Santa Clara	17	Stanford..	3
Edmonton	vs.	Stanford..		Santa Clara	4	Stanford..	6
Fed. Reserve	vs.	Stanford..		Fed. Wireless	1	Stanford..	20
Sodality Club	0	Stanford..	5	U. of C.	6	Stanford..	3
Letterman Hosp. ...	5	Stanford..	9	U. of C.	2	Stanford..	1
Santa Clara	4	Stanford..	5	U. of C.	7	Stanford..	0

Baseball—Freshmen

Palo Alto High	vs.	Stanford..		Cal. Frosh	vs.	Stanford..	
Commerce High	vs.	Stanford..		Lowell High	vs.	Stanford..	
Watsonville High ..	vs.	Stanford..		Cal. Frosh	vs.	Stanford..	
San Mateo High	vs.	Stanford..		St. Ignatius H.	vs.	Stanford..	
Oakland High	vs.	Stanford..		Cal. Frosh	vs.	Stanford..	

Track—Varsity

R.A.-J.S.-M.Y.	vs.	Stanford..		U. of C.	vs.	Stanford..	
Won by Stanford				Won by U. of C.			

*Won by San Jose "Y"

†Won by Stanford—3 games out of 3

Wrestling—Varsity

U. of C. 4 Stanford.. 1

Boxing—Varsity

U. S. C. 2 Stanford.. 4 L. A. A. C. 5 Stanford.. 1
 U. of C. 2 Stanford.. 5

Swimming—Varsity

Stockton High 30 Stanford.. 29 U. of C. 17 Stanford.. 51

Swimming—Freshmen

Lowell High 40 Stanford.. 28 U. of C. Frosh.... 41 Stanford.. 27
 Berkeley High 32 Stanford.. 26 Water Polo—Varsity
 Oakland Tech. 28 Stanford.. 45 U. of C. 3 Stanford.. 13

Water Polo—Freshmen

U. of C. Frosh.... 7 Stanford.. 4

Tennis—Varsity

U. of C.	vs. Stanford	.....	Stanford
Oregon	vs. Stanford	.....	Stanford
O. A. C.	vs. Stanford	.....	Stanford
U. of C.	vs. Stanford	.....	Stanford (Singles)
U. of C.	vs. Stanford	.....	U. of C. (Doubles)
U. of Wash.	vs. Stanford	.....	Stanford
Wash. State	vs. Stanford	.....	Stanford
Redlands	vs. Stanford	.....	Stanford
Pomona	vs. Stanford	.....	Stanford
Occidental	vs. Stanford	.....	Stanford
U. S. C.	vs. Stanford	.....	Stanford
U. of C.	vs. Stanford	.....	U. of C.
Federal Bank	vs. Stanford	.....	Stanford

Won by

Tennis—Freshmen

U. of C. vs. Stanford U. of C.

Won by

Fencing—Varsity

U. of C.	vs. Stanford	.....	Stanford
Pacific Coast Individual Fencing Championship	.....	{	Stanford first
Pacific Coast Team Championship	.....		Stanford second

Won by

The following is a report on the Summer Courses for the Training of Teachers in Physical Education:

Registration

1. The growth and development of the child, including health supervision or control of growth conditions.....	16
3. Physiology of the muscular and nervous systems.....	8
2. The organization and leadership of physical education in the high schools.....	18
4. Kinesiology.....	21
5. Physical examinations and growth divergences.....	24
6. Theory, principles and history of physical education.....	18
7. The principles of teaching and leadership, including an introduction to the teaching of hygiene.....	23
9. First aid to the injured, including conditioning of athletes.....	34
11. Methods in apparatus gymnastics and gymnastic drills.....	11
12. Methods in teaching soccer football.....	21

15. Methods in teaching track and field events.....	22
17. Methods in teaching American football.....	51
20. Methods in teaching advanced swimming and water sports.....	8
8. Adaptation of physical activities.....	20
14. Methods in teaching boxing.....	18
16. Methods in teaching baseball.....	19
18. Methods in teaching basketball.....	28
Total registration	360

Teachers from the following high schools have attended the Teacher's Courses in Physical Education during the Summer Term:

Bakersfield High School	Taft High School
Salinas High School	Wasco High School
Stockton High School	Fowler High School
Lindsay High School	Laton High School
Biggs High School	Compton High School
Palo Alto High School	Arceata High School
Ohio Normal School	San Mateo High School
Ohio High School	Wilmington High School
Fresno High School	Whittier High School
Lick Wilmerding, San Francisco	Redwood High School
Lemoore High School	Venice High School
Madera High School	Mission High School
Pasadena High School	Tucson, Arizona, High School
Santa Clara High School	San Francisco Polytechnic
Santa Ana High School	Wichita, Kansas, High School
Riverside High School	

PROGRAM

CONFERENCE OF ATHLETIC OFFICIALS

Encina Gymnasium,

Saturday, June 25, 1921.

- 9:00 a.m. Soccer—H. W. Maloney, Chairman.
 Organization of Soccer Leagues (15 min.)—Ray Dougherty.
 Promotion of Soccer as a High School Sport (15 min.)—
 H. W. Maloney.
 Soccer officiating ($\frac{1}{2}$ hr.)—Lynn Reynolds.
- 10:00 a.m. Baseball—W. D. Seay, Chairman.
 The Ethics of College Baseball (15 min.)—Dean George Culver.
- 10:20 a.m. Track and Field Events—H. W. Maloney, Chairman.
 The Conduct of Track Meets (10 min.)
 Events for High School Boys (15 min.)—Dr. H. R. Stolz.
 Organization for Track Meets (15 min.)—Dr. A. D. Browne.
- 11:00 a.m. Ethics of Athletics (15 min.)—Prof. A. T. Murray.
 Function of Interscholastic Athletics (15 min.)—Dr. H. R. Stolz.
 Function of Intercollegiate Athletics (15 min.)—Dr. A. D. Browne.
 Promotion of Community Athletics (15 min.)—H. W. Maloney.
- 12:00 a.m. Barbecue for visitors—Encina Gymnasium.

- 1:30 p.m. American Football—Walter Powell, Chairman.
 Football officiating from coach's standpoint (15 min.)—Walter Powell.
 The Referee (15 min.)—H. P. Braddock.
 The Umpire (15 min.)—H. Huebel.
 The Headlinesman (15 min.)—R. S. Marx.
 Discussion period (Rules, etc.)—J. P. Klawans, Chairman.
 Other officials in attendance, Dudley Clark and Jack Spaulding.
- 3:00 p.m. Basketball—H. W. Newsome, Chairman.
 Basketball officiating from coach's standpoint (15 min.)—Earl Wight.
 Basketball officiating (15 min.)—W. A. Kearns.
 Discussion period, rules, etc.—Glenn, leader.
- 4:00 p.m. Managers' Conference.
 Arranging a schedule, increasing gate receipts, holding down expense and how to make up an athletic budget. Informal discussion.

The following is a list of professional activities engaged in by members of the Staff during the college year:

A. D. Browne:

President Western District American Physical Education Ass'n.
 Member of National Council

National Collegiate Athletic Association

Vice-President

Member Nominating Rules Committee

Member Track and Field Rules Committee

American Amateur Athletic Union

Vice-President Pacific District

Member National Play Ground Committee

Member National Wrestling Committee

Convention Addresses and Papers read:

American Student's Health Association

National Collegiate Athletic Association

American Physical Education Association

Chamber of Commerce School, Stanford

Pacific Coast Athletic Officials Conference

H. W. Maloney:

Coach of Rugby Team, Olympic Games—Antwerp

President California Football Ass'n.

Address:

Athletic Officials Conference

C. S. Botsford:

Vice-President Bay Cities Physical Education Association

Chairman Entertainment Committee, Pan-American Convention

American Physical Education Association.

Address:

Community Recreation

Walter Powell:

Member of Football Rules Committee National Collegiate Ass'n.
Address:

Athletic Officials Conference

Ernst Brandsten:

Member of Swimming Rules Committee, National Collegiate Ass'n.

ALFRED DAVID BROWNE,
Associate Professor of Physical Education
and Medical Adviser of Men.

PHYSICAL EDUCATION FOR WOMEN

Roble Gymnasium

The staff of Roble Gymnasium for the academic year 1920-21 consisted of Helen Masters Bunting, Director; Clelia Duel Mosher, Medical Adviser; Yolanda Shaw Allen, Greta Johannsen Brandsten, Lois Marjorie Kendall, Instructors; Georgina Meyer Burk, Secretary. Miss Allen resigned at the end of the spring quarter to continue her studies at Wellesley College. The following were also on the staff for the first half of the summer quarter only, giving special courses for teachers of Physical Education: Lila Beebe, M.D., Signe Elizabeth Hagelthorne, and Elizabeth Ueland.

The aim of the department has been to further the best interest of the health of the women students by providing systematic and properly graded exercise for all, to cultivate a spirit of democracy and to stimulate high ideals of sportsmanship and citizenship.

Medical and physical examinations were given to all new students and old students returning and taking work in the department. When the results of this examination showed the need for any special type of work the student was assigned to the work best suited for her needs. Special classes, limited to small groups at a time, were conducted in corrective and remedial gymnastics for the correction of faulty posture, flat feet, constipation, dismenorrhea, and other remedial handicaps.

Students whose medical and physical examinations did not indicate the need for any special type of work were allowed to choose from any of the courses offered in the department during the autumn and spring quarters; the only requirement being that Swedish gymnastics must be taken in the winter quarter, and at least one quarter of swimming must be taken during the six quarters of required work in the department. All students in the special clinics, and all students needing special observation, were re-examined frequently during the year; and all students taking work in the department were given medical and physical examinations at the close of the spring quarter. These examinations were given by the Medical Adviser, the Director of the Department, and two instructors on the staff. The Medical Adviser gave additional examinations to new students entering the University who did not take work in the department.

The department conducted courses in ten different activities for the regular university students, and in addition gave, during the first half of

the summer quarter, at the request of the State Superintendent of Physical Education, eighteen special professional courses for the teachers of physical education in the state. The Medical Adviser also gave a three hour elective course in personal hygiene during the spring and summer quarters. The Director of the Department gave a course of six required lectures on personal hygiene during the winter quarter to all freshmen and other new women in the department.

New athletic fields have been constructed back of the gymnasium. On June fourth the new turf field, 300x180 feet, was dedicated by appropriate ceremonies. This turf field will make one hockey field, four basket ball courts, and one base ball diamond in the fall, winter and spring quarters respectively. The new fields also contain a dirt hockey field and six oil-macadam tennis courts. This is a splendid beginning for more extended athletic fields for the women of Stanford, and will do much toward stimulating a wider participation in wholesome activities.

The growth of the department during recent years has been very rapid. In 1910-11 the average registration per semester was 144 students. This year the average registration per quarter (exclusive of the summer quarter which had a total registration of 179 students) was 381. This increase during the last ten years of more than two and a half times the number of students registering per quarter for work in the department has greatly taxed our facilities for effective work. The demand for increased facilities has been met in part by the construction of a swimming pool in October 1916 and the new athletic fields this year.

The need for a new gymnasium with increased shower and dressing room facilities and an enlarged floor space for conducting classes is most urgent. The present gymnasium building, having been constructed thirty years ago, is obviously inadequate for present needs. The floor space is so small we are obliged to divide classes into three sections which could otherwise be handled in one section. This means a great waste of time and energy of the teaching staff. Much of the present gymnastic apparatus is inadequate and antiquated, and results in loss of time during the class work and a consequent reduction of efficiency and effectiveness of work. The space and equipment for conducting the corrective and remedial classes is most inadequate. Owing to the large number of students for whom we must provide between the hours of four and six in the afternoon we have been obliged to assign two, and in many cases three, students to the use at the same hour of a single dressing room, five feet by three feet four inches, designed for the use of one person at a time. Therefore, because the department has entirely outgrown its building, it is most earnestly urged that a new gymnasium be provided at the earliest possible date.

The need for training teachers of physical education, to conduct the work throughout the state, is most urgent. Stanford can help meet this need by establishing a three year Professional Course in Physical Education, to be superimposed upon the Lower Division work. The Director of the Department feels that such a course could be added to the curriculum with comparatively little expense as soon as a new gymnasium makes

possible a more economic administration of the present activities of the department. This summer an effort was made to meet in part this need of the state by giving the special courses for teachers already referred to. Forty-eight teachers from various parts of the state registered for these courses at Roble Gymnasium. The Director of the Department feels that a much larger registration will follow next summer if the courses are repeated at that time.

The close co-operation and cordial relations already established between the Department and the Women's Athletic Association were continued during the current year. The Director of the Department served on the Executive Board of the Women's Athletic Association, and all coaching for the activities of the association was supplied by the department staff, as last year, without cost to the association.

The Director of the Department served as Chairman of the Faculty Committee on Women's Athletics, which is appointed yearly by the President of the University.

The Medical Adviser served on the Public Health Committee, which is appointed yearly by the President of the University.

The Medical Adviser is making a study of the entrance physical examinations of 4023 women who have entered the University during the past thirty years. A preliminary paper "Concerning the Size of Women" was published in the California State Journal of Medicine in February. The work is far enough advanced to make possible the presentation of a second paper by the end of the quarter. Four war sketches based on her observations while on duty with the American Red Cross in France have been published.

During the year the Medical Adviser read the following papers: "The strength and endurance of women", and "The practical value of health" at the San Mateo County Teachers Institute, October 12, 1920; "Physical training and athletics a good preparation for motherhood", before the Public Health Nurses Association, District No. 12 on June 29, 1921; "The means to the end", before the National Convention of the American Physical Education Association, Berkeley, California, July 22, 1921.

The Director of the Department attended a large proportion of the sessions of the National Convention of the American Physical Education Association, held in Oakland from July 18 to 23, 1921. The Director was this year elected Secretary-Treasurer of the Western Society of College Directors of Physical Education for Women. She has also served during the past year as President of the Central California Club of Graduates of the Department of Hygiene of Wellesley College.

Respectfully submitted,

HELEN MASTERS BUNTING,
Director, Roble Gymnasium.

PHYSICS

The faculty of the department was as follows: David Locke Webster, professor; Frederick John Rogers, associate professor; Joseph Grant Brown, Elmer Reginald Drew, Perley Ason Ross, assistant professors; George Russell Harrison, instructor; Frank Clark Hoyt, teaching assistant.

The courses of instruction have been offered on a new plan, in which the changes in the engineers' courses are chiefly in fitting the laboratory work rather more closely to the requirements of the engineering departments, while the non-engineers' courses have been more extensively remodeled. In the latter group, a three-unit course has been introduced, under the title, "Modern physics," dealing with the remarkable advances made in the last few decades in our knowledge of the nature of matter and energy. These advances have, in fact, been so rapid, and the difficulties of presenting this subject without the higher mathematics have been so apparent, that the undergraduate text-books and even the courses of that grade in most universities have failed to keep up to date in this science. So the present course is distinctly an experiment, but it is quite a satisfactory one.

In the research field, Professors Webster and Ross and Dr. Hoyt have been working on X-rays, and for this purpose have set up an apparatus for producing exceptionally steady direct current at any voltage up to 90 or 100 kilovolts, with a power capacity of about a kilowatt. Professor Webster has obtained some preliminary results in a research on the distribution of X-rays of different frequencies, with reference to the direction of motion of the electrons producing them. The chief object of this research is to get information on the possibility of the radiation of energy by electrons not attached to definite atoms. Professor Ross is investigating the critical potentials for the excitation of X-rays of the M series, to decide certain questions on the nature of the structures within the atoms that produce this series, and he has recently obtained some important data on that problem. Dr. Hoyt has finished his Ph.D. thesis, begun at the Massachusetts Institute of Technology, on the critical potentials of some faint lines of the L series. The X-ray equipment of this department has been used also by Mr. O. L. Sponsler of the Department of Botany in a research on the structure of starch.

During the year Professor Emeritus Sanford has been engaged in collecting and discussing data on the diurnal variation of electric potential-difference between the earth and an uncharged, insulated conductor which has been kept in a metal cage. The purpose of the investigation is to try to find a satisfactory interpretation of the phenomenon.

Professor Webster has also written a section of the Report of the X-Ray Committee of the National Research Council, on "Problems of X-Ray emission," and a section of the Report of the Atomic Structure Committee of the National Research Council, entitled "A general survey of the present status of the atomic structure problem, Part I" (Part II being by Professor Page, of Yale).

Professor Rogers has been making a series of tests of certain electrostatic effects, which Professor Sanford had previously ascribed to the electrostatic field of the sun, but for which Professor Rogers finds an explanation in other causes not involving any celestial body. As a by-product of this investigation, it appears to be proved that there is often an ionization of the air at the surface of a metal, which may be due to chemical action.

Professor Brown has continued his previous work on the so-called active and passive states of iron in nitric acid, and has proposed a theory that the rate of solution is determined by the valence of the iron ions formed and the nature of the ions with which they unite. This work is being extended to other metals.

Mr. Harrison has been investigating the conditions for the absorption of light of different frequencies by sodium vapor, and their relations to the electrical and thermal state of the vapor. He spent the summer at the Bureau of Standards, assisting in work on related problems and studying the technique of such work that has been developed there. His work at Stanford is being continued.

DAVID LOCKE WEBSTER,
Professor of Physics.

PHYSIOLOGY

The staff of the department consisted of Professor Ernest Gale Martin; Assistant Professors James Rollin Slonaker and Frank Walter Weymouth; Instructors James Percy Baumberger and George Daniel Shafer; Acting Instructor James M. D. Olmsted. Acting Assistant Professor Arthur Gibson Vestal and Assistants in Instruction Olenus L. Sponsler and Edna E. Perry were assigned to the department for administrative purposes, although their duties were in connection with the course in General Biology.

The department was busied during the year in connection with the organization and administration of the courses in General Biology to which extended reference is made in another place (see report of committee on General Biology). Certain important innovations in the regular instruction in Physiology were also planned and put into effect. These consisted in a departure from the traditional plan of presentation of the subject matter of physiology, according to which the several bodily functions are considered in turn, to a scheme whose essence is the study of the intrinsic properties of living protoplasm as a basis for considering how these properties exhibit themselves in a highly organized form like that of man. The advantage of this latter plan is that it makes all the bodily functions manifestations of one and the same fundamental substance, protoplasm, and enables the student to perceive the logical relationships of the various parts of the subject of physiology more readily than when the functions are studied in turn, more or less as distinct topics.

The revision involves the introduction into the course of lectures and laboratory work dealing with the application of physical chemistry to physiology and medicine, and enables the students to become familiar with the most modern methods and apparatus by which these applications are made. According to the present schedule one third of the student's time is occupied with fundamental conceptions of physiology; one third with the application of these to bodily maintenance; and one third with their application to the means by which the body adjusts itself to its environment.

The research activities of members of the department were as follows: Acting Instructor Olmsted continued the investigation of the phenomenon of moulting in crabs, working jointly with Instructor Baumberger. He also studied some phases of regeneration in flat worms (*Planaria*).

Dr. Baumberger continued the investigations begun last year on the chemistry of tobacco smoke. His studies included estimations of the carbon monoxide content of the smoke, and of the degree of retention of the smoke within the respiratory passages in inhaling. For this latter study he used an electrical precipitation method in connection with which invaluable aid was rendered by Professor Ryan. The department takes this opportunity of expressing its appreciation of this courtesy and also its gratitude for the free use of the facilities of the high tension laboratory, without which the investigation would have been impossible.

Dr. Baumberger carried on in collaboration with Mr. Wm. Alexsahnt a study of the effect of certain poisons on the contractions of skeletal muscle. He completed and prepared for publication papers on form and growth in moulting (in collaboration with Dr. Olmsted); on the influence of tobacco on industrial efficiency (in collaboration with Miss Edna Perry and Professor Martin); on fatigue and error in a mental occupation; on the effect of alternating occupations on working capacity; and on Weber's law and visual judgment of size in comparison with permitted tolerance in glass blowing.

Dr. Shafer continued his studies of growth and moulting in aquatic larvae of certain insects, and also his experiments looking toward the control of mating in the honey bee.

Assistant Professor Weymouth completed a survey of the mollusk resources of the state, undertaken for the California Fish and Game Commission; the results being published as Fish Bulletin No. 4, California Fish and Game Commission, 1921. An extended consideration of growth as exemplified in the Pismo clam (*Tivela*), part of a general program of the department for the investigation of this phenomenon, is being practically completed.

During the year the following students were engaged in research with or under the direction of Professor Weymouth: Paul R. Brust and F. H. Gobar on ocular muscle balance with particular reference to the relation of accommodation and convergence; Emilie E. Anderson on binocular perception of distance; Harold L. Averill and Herbert D. Marino on color-blindness in University students; T. P. Hughes on skin temperature and its relation to indifferent temperatures; Dwight L. Willbur on certain aspects of digestion in Actinians; and L. Irving on certain problems connected with digestion and excretion in the Asteroidea.

Assistant Professor Slonaker completed and published studies as follows: a method of computing ages of animals; some morphological changes for adaptation in the mole; the physiology of accommodation in the eye of the bird; the development of the eye and its accessory parts in the English sparrow; a simple method of administering anesthetics. He also completed an investigation which has occupied him for several years on the effect of diet on fecundity and on the young of the albino rat, and

made progress in the assembling of the results for publication. He continued his study of the effects of estruation and gestation on voluntary activity in rats.

Professor Martin continued his connection with the National Committee to study the Tobacco Problem, and also his membership on the Sub-committee on Experimentation. The various studies of tobacco mentioned above constituted a part of the program of that Sub-committee. During the Christmas holidays Professor Martin attended the meetings of the American Association for the Advancement of Science and of the American Physiological Society at Chicago. He read two papers before the latter society, one a report of his work with Mr. Blake Wilbur on Salt Antagonism in *Artemia*, the other a report of the observations of Dr. Baumberger on Error as a Criterion of Industrial Fatigue.

During the year the investigation of the effect of its environment on the duration of life in the brine shrimp (*Artemia*) was continued by Professor Martin as a joint investigation with Mr. Blake Wilbur. In collaboration with Mr. R. B. Armitstead a study of the influence of adrenalin on metabolism in excised skeletal muscle was completed and submitted for publication; with Mr. L. A. Jacoby an investigation of vasoconstriction as the result of warmth stimulation was completed; with Mr. M. L. Tainter the inhibition of erection by decerebration was investigated. Messrs. H. S. Wells and A. H. Beede carried on under Doctor Martin's direction an experimental investigation of the validity of the Pignet formula (Medical War Manual, Number 1, page 70) as a criterion of physical efficiency. Professor Martin contributed to the July number of the new journal, *Physiological Reviews*, at the request of the Board of Editors, a general paper on tests of muscular efficiency. He also completed and sent to press the volume on Physiology of the forthcoming set of semi-popular scientific books to be issued by Collier's.

Mr. Richard Shevsky continued his investigation of the physiological effects of the toxin of botulism during the autumn and winter quarters. In this investigation the Department of Physiology was contributing its facilities to the Department of Experimental Medicine of the Medical School.

In conclusion a word should be said about the great advantage the Department enjoys through its affiliation with the Hopkins Marine Station. Of the researches listed above those of Professor Weymouth on the Pismo Clam, of Doctors Baumberger and Olmsted on Growth and Moulting in Crabs, and of Messrs. Wilbur and Irving on Digestion in Marine Invertebrates were greatly facilitated by the opportunities offered at the Marine Station.

ERNEST GALE MARTIN,
Professor of Physiology.

REPORT OF THE COMMITTEE ON GENERAL BIOLOGY

The Lower Division course in General Biology is an outgrowth of a project initiated chiefly by Professor L. L. Burlingame early in 1920. Before the establishment of the Lower Division it was felt that there was a distinct field for instruction in General Biology in a university curriculum,

and an informal committee, consisting of Professors Burlingame, Heath, E. G. Martin, and Peirce, prepared an outline of such a course, which it was proposed to offer as an elective without prerequisites.

With the adoption by the Academic Council of the Lower Division requirement of nine units of biological science the expansion of this proposed elective course became necessary, and the gentlemen named above were appointed as a committee on General Biology to organize and administer a course that should meet the Lower Division requirement in biology.

A preliminary outline of lectures and laboratory work was prepared by Professor Burlingame. Dr. Arthur Gibson Vestal, formerly of the Illinois State Normal School and the University of Colorado, was appointed acting assistant professor and assigned the task of organizing and conducting the laboratory part of the course; Assistants in Instruction Olenus Lee Sponsler and Edna Elizabeth Perry were assigned to aid him in his duty.

The following individuals, in addition to the committee, were asked to take part in the work of instruction, and without exception gave freely of their time and energy. It is a pleasure to place on record here the statement that in large measure the success of the course has been due to the hearty coöperation of these gentlemen:

Professor T. H. Morgan, of Columbia University,	4 lectures on heredity.
Professor Abrams	1 lecture on plant distribution.
Professor Doane	1 lecture on the role of insects in nature.
Professor W. K. Fisher	1 lecture on distribution of animals.
Professor McMurphy	1 lecture on plant diseases.
Professor J. P. Smith	1 lecture on geological history.
Professor Terman	2 lectures on human inheritance and environment.
Professor Weymouth	2 lectures on sense perception.
President Willbur	3 lectures on disease and
	1 lecture on the influence of discovery on human progress.

The chief burden of the conduct of the course was borne by Professor Burlingame. The other members of the committee desire that he should receive full measure of credit for his unremitting labors both in the period of preliminary organization and during the progress of the course itself.

ERNEST GALE MARTIN, Chairman.

POLITICAL SCIENCE

The teaching staff in Political Science for the year consisted of Edwin Angell Cottrell, professor, Frank Marion Russell, acting assistant professor, and Amelia L. Hedges, research assistant. Professor Arthur Norman Holcombe of Harvard University served as acting professor during the summer quarter, giving courses in political theory and elections. Professor Victor J. West, executive head of the department, was on sabbatical leave during the year. He has been connected with the United States Bureau of Efficiency in charge of investigations on departmental reorganization of the federal government.

Enrolment: The department has more than doubled its enrolment of students during the year. The total of 1144 students shows an increase in practically all courses offered by the department. There were forty-four major students registered for the year. The encouraging feature of this registration is the increase in graduate students. These graduates are making studies in State Civil Service, Initiative and referendum in California, City manager in Sacramento, State reorganization plans, American police systems, Legal and constitutional aspects of the Colorado River development.

Department Activities: During the year the department has supervised a very extensive industrial and social survey of Santa Clara County and the City of San Jose. The results of this survey have been published in full in the press and are in pamphlet form under the auspices of the San Jose Chamber of Commerce. A plan of development of San Mateo County is now being worked out under the supervisors of that county and the Peninsula Bureau of Chambers of Commerce and Civic Organizations. The department is also making studies for committees of different organizations. One is the committee at work on framing a new charter for the City and County of San Francisco, and another a committee on the coördination of all state development activities. During the summer quarter the American City Bureau conducted a most successful school for community leadership at the University. The attendance of one hundred forty-two civic and commercial secretaries and others from six western states and Canada impressed upon those interested in the success of this movement the necessity for its continuance. An invitation has now been issued to all organizations on the coast interested in community development and government to meet at Stanford during the second and third weeks in September 1922 for a general conference on these subjects. If these plans carry a gathering of approximately one thousand will result.

Department changes: Mr. West returns from his sabbatical leave in October. Mr. Cottrell lectures at Harvard during the winter and spring quarters of next year. Miss Hedges will continue as research assistant. Mr. Russell has taken a position at the University of California.

EDWIN ANGELL COTTRELL.

Professor of Political Science.

PSYCHOLOGY

There were 768 registrations in the department last year, of which number 214, or over twenty-seven per cent, are to be accredited to the laboratory. The value of laboratory training, especially in a science which deals with such elusive processes as psychology, is evident. Less evident but not less valuable is the experience that in a domain where charlatanry seems to have full play, the rules of scientific procedure are to be as rigidly applied as in any other natural science. In the domain of applied psychology, which as commonly understood today runs the gamut of human interests from trade tests to fortune telling, the need of sci-

entific laboratory training is becoming more and more apparent, not merely in giving a sense of legitimate methods, but to counteract the tendency to work by rule of thumb procedure.

The necessity for the laboratory work being evident, our present laboratory facilities, both as regards space and teaching force, are not enough to meet the necessity. Indeed it will be found necessary during the coming year to cut down the number of laboratory workers. The question of space has already been brought to your attention and plans have been suggested, which, if carried out, will probably relieve the congestion.

As regards personnel, the present force is too small to meet all the demands that are made upon it and it is so busy with teaching that but very little time is left for investigation. Even Dr. Coover, who as Research Fellow is supposed to be free from pedagogical calls, has had his services commandeered and is giving courses in statistics and helping in some of the advanced laboratory work. But the great bulk of the laboratory teaching falls at present on two of the staff who find it extremely difficult to give the individual work which constitutes the most valuable feature in teaching.

During the winter Dr. Shepherd Ivory Franz, of the Government Hospital for the Insane at Washington, delivered a series of lectures on Psychopathology. The lectures were largely attended by both faculty and students. Another addition to the regular faculty was found in Dr. E. G. Boring of Clark University, Massachusetts, who gave an admirable series of lectures during the summer quarter on Sensation and Perception.

Miss Maud Merrill's clinical work in San Jose has been well received in that city and constitutes a needed supplement to the work in normal psychology.

Investigations mentioned in previous reports are being continued in such time as the exigencies of teaching allow.

FRANK ANGELL.

ROMANIC LANGUAGES

The staff of the department for the year 1920-21 consisted of Oliver Martin Johnston, professor; John Driscoll Fitz-Gerald, acting professor (first term of summer quarter); Clifford Gilmore Allen, Aurelio Macedonio Espinosa, associate professors; Stanley Astredo Smith, Alfred Coester, assistant professors; René Levesque, acting assistant professor (summer quarter); Frederick Anderson, William Leonard Schwartz, instructors; Ida Stauf, Elizabeth Dana Woodbridge, Jessie Edna Smith, John Parsons Weller, Ivan Rush Messenger, Helene Marie Hall, Ethel Lee, Gertrude Peters, Helen Eugenia Haist, Edvige Mary Cerruti, assistants in instruction.

Professor John Driscoll Fitz-Gerald, of the University of Illinois, served as acting professor of Spanish during the first term of the summer quarter, and Assistant Professor René Levesque, of Laval University, Quebec, was acting assistant professor of French during the entire quarter.

Mr. Allen and Mr. Espinosa have each been promoted to the rank of professor.

The total number of major students enrolled in the department was 99, of whom 68 were majors in French, and 31 majors in Spanish. Seventeen students received the degree of A. B.

The number of graduate students enrolled in the department was 21. The degree of Master of Arts was conferred upon: Leo George Lacombe, thesis, "Some aspects of French modernism with special reference to Alfred Loisy"; Dorothy Leeds Walsh, thesis, "A study of the influence of Lope de Vega on Calderón de la Barca"; John Parsons Weller, thesis, "The pluperfect and past anterior in modern French"; Zelda Louise Wickersham, thesis, "Imaginary names in La Chanson de Roland."

Mr. Johnston has served as a member of the Dante Memorial Association of One Hundred and of the National Dante Committee appointed to promote in the United States a national recognition of the six hundredth anniversary of Dante's death (1321-1921).

In April, Mr. Espinosa was elected a corresponding member of the Spanish Academy.

Mr. Johnston has work of research in progress on the origin of the French feudal epic; in collaboration with J. Reinhold of Cracow, on a critical edition of *Floire et Blancheflor*; in collaboration with Professor Elmore of the Latin Department, on a French grammar for use in colleges and secondary schools.

Mr. Allen is preparing for publication a collection of Spanish dramas of the late 16th century Ms. No. 14864 of the Biblioteca Nacional at Madrid.

Mr. Espinosa has carried on work of research on synalepha in old Spanish; on the *Leyenda de los Infantes de Lara*; on various types of folktales; and is preparing for publication 300 Spanish folktales with comparative notes.

Mr. Smith has continued his study on the theater of Guiseppe Giocosa.

Mr. Coester is preparing a Spanish edition of his *Literary history of Spanish America* and a history of Argentine literature.

Mr. Anderson is preparing for publication the manuscripts left by the late Professor George Hempl.

Mr. Schwartz spent the summer quarter in travel and study in Europe and plans to remain there through the autumn quarter. He has continued his study on the influence of the Far East on modern French literature.

OLIVER MARTIN JOHNSTON,
Professor of Romanic Languages.

ZOOLOGY

The department faculty for the year 1920-21 consisted of Charles Henry Gilbert, George Clinton Price, Harold Heath, professors; John

Otterbein Snyder, Walter Kenrick Fisher, associate professors; and Edwin Chapin Starks, assistant professor.

Professor Gilbert continued his activities as Scientific Assistant to the United States Bureau of Fisheries. He completed a report on the investigations of the previous summer on the salmon supply of the Yukon Valley, Alaska, including recommendations, which have since been adopted by the Government, for the abolition or the strict limitation of commercial fishing in those larger rivers of Alaska, which are depended on by the inhabitants of the frozen interior to furnish them an indispensable article of food. Professor Gilbert has prepared for publication an account of the life-histories of the Yukon salmon, based on scale readings, and also continued his investigations, on behalf of the Provincial Fisheries Department of British Columbia, of the salmon runs to the principal rivers of that province. During the summer of 1921, he will supervise important experiments which have been devised to determine two fundamental questions in connection with the salmon industry, to which no answer has thus far been obtained. It is desired to ascertain what constitutes a safe spawning reserve, whether 10 or 25 or 50 per cent of the entire salmon run; and it is essential to learn whether artificial propagation, as practiced in present-day hatcheries, produces results surpassing those of natural propagation. The experiments will be conducted on Quinault river, Washington, and on Karluk river, Kodiak island, Alaska. During the greater part of the spring quarter of the year, Professor Gilbert was absent from the University on sick-leave.

Professor Heath completed, under the auspices of the State Fish and Game Commission, a survey of the native oyster of the state. The work comprised a study of the environment, food, and rate of growth together with experiments that demonstrate the possibility of a much larger yield than at present. A technical account of the development of the native oyster is nearing completion.

He was also a co-worker with Mr. Blake Wilbur in the study of the formation of the various castes in certain species of California termites.

Associate Professor Snyder was engaged in studies of the life history of salmon and trout under the authority of the Fish and Game Commission of California. Vacations were utilized for field observations on the Sacramento, Klamath, and other rivers, and also along the coast where salmon are taken at sea. University students have at times been employed as assistants in the field and laboratory, and collections of fishes have been secured from which additions of value will be made to the zoology museum. In addition to our knowledge of the salmonoids, it is expected that these investigations will materially aid in the conservation of certain valuable food fishes.

Assistant Professor Starks has completed for publication a Key to the families of fishes of the Pacific Coast of America, and has made comparisons of closely related species from the Atlantic and the Pacific, based on material furnished by the United States Bureau of Fisheries. Studies were continued on the osteology and on the relationships of some of the larger groups of fishes.

Associate Professor Fisher, in charge of the Hopkins Marine Station, continued his work on a monograph of North Pacific sea stars.

CHARLES HENRY GILBERT,
Professor of Zoology.

ENTOMOLOGY AND BIONOMICS

The faculty of the department was composed of Rennie Wilbur Doane, associate professor; Mary Isabel McCracken, assistant professor; Gordon Floyd Ferris, instructor.

The number of major students was fourteen, of whom two were graduates.

Associate Professor Doane continued his work as a member of the Board of the Matadero Mosquito Abatement District, and also directed the work of the control of the Argentine ant on the campus and in Palo Alto. Late in the spring this work also was turned over to the Mosquito Abatement District. The summer of 1921 was again spent in the study of insect and plant conditions in the vicinity of industrial plants throughout various parts of the United States. Advantage was taken of opportunities to visit the laboratories of many of the educational institutions in various states and to become acquainted with the work that is being done in these places. A series of experiments to test the effect of various spray materials on bees that are feeding on trees that have just been sprayed was carried on during the fall, winter, and spring quarters. The results of these experiments showed that the spraying of trees, especially in California, is not of as much importance to the beekeepers as has been supposed. These experiments will be continued during the coming year.

Assistant Professor McCracken continued her study of the Hymenoptera (Vespoidea, Sphegoidea, Cynipidae, Apoidea), and the bionomics of the honey-bee and the silkworms.

Instructor Ferris continued his work on a large collection of ectoparasites of mammals, and Part II of the "Contributions Toward a Monograph of the Sucking Lice" is now in press. Work was also continued on the scale insect collection. With the support of funds received from the University Research Fund and from the state entomologist of Texas, the summer of 1921 was spent in collecting scale insects in Texas. The results of this work, which will constitute the largest contribution that has been made to the knowledge of the scale insects of North America, will be published as a bulletin of the Texas Experiment Station.

The scale insect collections have been enriched by the receipt of the large collection of Mr. R. S. Woglum, which has been deposited with us as a loan. Throughout the year the services of the department have been placed freely at the disposal of those desiring identifications of scale insects and aid has been given especially to the State Plant Board of Florida and to the State Entomologist of Louisiana as well as to various county horticultural commissioners in California, and to individuals throughout the United States, in Hawaii, the Philippines, and England.

A small orchard of mulberry trees and fruit trees was planted in the plot set aside for this purpose in the nursery. This will greatly facilitate the work with the silkworms and with the orchard insects.

A valuable collection of Cynipidae from S. A. Rohwer and L. H. Weld of the U. S. National Museum, has enriched our collection of Hymenoptera fauna. This was sent in exchange for a like collection of our local fauna.

Mr. F. R. Cole, who held a University fellowship for the year, received his Master of Arts degree in April, 1921. He completed his thesis in October, 1920. Subject: "A Monograph of the Dipterous Family Therevidae of North America."

Mr. Kuhn Kannan of the Imperial Department of Agriculture of Mysore, India, received the degree of Doctor of Philosophy in June, 1921. Mr. Kannan presented a thesis on "The Functions of the Prothoracic Plate in the First Larval Instar of Bruchids."

RENNIE WILBUR DOANE,
Associate Professor of Entomology.

APPENDIX III.

COMMITTEE REPORTS

ATHLETICS

The Faculty Athletic Committee for the year consisted of the following: Alfred David Browne, chairman; John Pearce Mitchell, Augustus Taber Murray, Everett Wallace Smith, Halcott Cadwalder Moreno.

There was no change in the policy of the Athletic Committee during the past year.

In my report to the President last year, I called attention to the matter of the period of time students participating in intercollegiate athletics must be absent from the campus. So long as we maintain relations with the Northwest institutions through the Pacific Coast Conference, Stanford teams must travel into the states of Oregon and Washington each season. The absence of these students is a matter of great concern to the faculty. There is only one solution—and this is for Stanford to withdraw membership from the Conference. Schedules could then be arranged which would not necessitate long trips and a great deal of lost time from university studies.

ALFRED DAVID BROWNE,
Chairman.

BOARD OF ATHLETIC CONTROL

The members of the Board for the year 1920-21 were the following:

Faculty: A. D. Browne, A. T. Murray, J. P. Mitchell.

Alumni: L. W. Cutler, R. W. Barrett, T. M. Williams.

Students: F. L. McElroy (throughout the year), A. P. Holt, W. Kilpatrick, B. W. Gillespie, R. F. Pelouze, E. R. Caughey, J. T. Murphy, J. Davies, M. M. Kirksey, J. C. Patrick, W. F. Leiser, C. E. Righter, D. W. Evans, James Petrini, (each for a portion of the year.).

Officers: T. M. Williams, Chairman; J. P. Mitchell, Sect'y.-Treas.; E. R. Martin, Graduate Manager.

The year 1920-21 was a year of expansion following the adjustment made during the previous year. The main items were an increase in the staff; the construction of the Basketball Pavilion and of the Stadium.

The first formal action concerning the Basketball Pavilion was taken on November 4, 1920, and is best recorded by the following abstract from the minutes of that meeting:

"The Board voted to undertake the construction of the Basketball Pavilion at the estimated cost of \$80,000.00, the required sum to be loaned by the Board of Trustees of the University and repaid with interest as follows:

"This Board to appropriate \$7,500.00 per year out of its budget; the University to appropriate \$5,000.00 per year; and the students to request voluntarily the collection by the University of a special fee of \$1.00 per student per quarter until the loan is repaid with interest.

"It is understood that the construction of this pavilion is authorized as soon as the conditions stipulated in the above motion have been ratified."

Following this action the students, at a general election, voted almost unanimously in favor of the plan as outlined. Construction was begun during the spring of 1920; work was delayed by strikes during the summer; and the building will probably be completed on January 1, 1922 at a total cost of approximately \$100,000.00.

The construction of the Stadium was first seriously considered in November, 1920. Plans were made during the winter and spring for financing and building the structure with a view to its completion in 1923. It then developed that it could be built during the summer of 1921, and this was finally done. The development of the project is outlined as follows:

November 4, 1920—The Trustees of the University were requested to approve the site selected.

The President was requested to ask Professors Marx, Durand and Wing to serve as a Commission to prepare plans and specifications.

December 1, 1920—The decision was reached that the most desirable type of construction is the sunken with embankment, and that the Stadium should be large enough to contain a field for either American or Rugby football, a track with 220 yards straightaway, and a seating capacity for at least sixty thousand people. It was voted that the engineering Commission be asked to proceed with the preparations of final plans on this basis.

December 21, 1920—A tentative financial plan was adopted to be submitted by letter to the alumni. This plan was to sell options to purchase tickets at the rate of two tickets for ten years for each one hundred dollar subscription, and at the same time to raise the price of tickets to a maximum of five dollars each.

February 26, 1921—The report of the Engineering Commission was presented. "The estimated cost on the basis of covering the slope with concrete was \$345,000.00; on the basis of constructing the seats and steps of wood, without any concrete, \$200,000.00. The Commission recommended that a stadium with wooden seats be constructed.

Upon motion, it was voted that the recommendation of the Engineering Commission be accepted and that the Board express its thanks and appreciation for the thorough report submitted."

March 18, 1921—The following report of the Stadium Committee for financing the Stadium was adopted:

"That ticket-privileges for fifteen years be given in return for subscriptions to the Stadium; a subscription of \$100.00 to insure the subscriber the right to purchase two choice reserved seats for a period of fifteen years at a price not to exceed \$4.00 per seat; a subscription of \$200.00 to assure the subscriber the right to buy four choice seats under the same terms; and so on up to the point where an option is given on ten seats for a subscription of \$500.00.

"That the Board undertake to consider the subscriptions as loans, which should be turned over by it as rapidly as possible to some useful University purpose.

"That the Board recommend that this money be turned into an endowment fund for general University purposes, which would include scholarships if—when the money is available—they should be considered of paramount importance. It is understood that the Advisory Board of the Alumni Association, in consultation with the University authorities, will determine the uses to which the fund shall be put. If the subscriber does not care to have his money go into such a fund, he may indicate the particular purpose to which he desires it to be put, and the Board will undertake to see that it is so administered."

April 27, 1921—Messrs. Baker & Carpenter were appointed engineers in charge of construction.

The decision was reached to complete the Stadium by Nov. 1, 1921, provided the necessary financial arrangements can be made.

May 14, 1921—The plans and specifications as prepared and presented by Messrs. Baker & Carpenter were adopted, and bids requested.

May 24, 1921—The bid presented by Messrs. Palmer & McBryde for constructing the Stadium at an approximate cost of \$166,711.00 accepted. The total cost was estimated by Messrs. Baker & Carpenter to be \$210,000.00. Arrangements were completed through the Bank of Palo Alto for a loan of \$100,000.00 at 6½% for a year to anticipate subscriptions and gate receipts.

June 5, 1921—Construction started. The progress during the summer was very satisfactory, and the Stadium was practically completed on November 1, 1921.

During May 1921 the staff at Encina Gymnasium was reorganized with the result that Dr. A. D. Browne became responsible for the work of the Medical Adviser and for the conduct of courses in hygiene and physical education, and Mr. Walter Powell became acting executive officer for the Board, and acting director of the Department of Physical Training.

The results of the year's operations are best presented by the following extracts from the Treasurer's report, which is printed in full as an appendix to the University publication on the Students' Organization Fund:

FISCAL YEAR 1920-21

Receipts

Fees	\$34,484.82	
Gate receipts	65,013.12	
Store at Encina Gymnasium—Gross profits for year..	975.53	
Miscellaneous	1,191.15	
		<hr/>
		\$102,392.62

Expenditures

Athletic repairs, maintenance and improvements.....	\$5,344.34
Gymnasium expenses, including laundry and towels..	8,256.58
Intercollegiate sports, supplies, equipment and expense of minor sports.....	9,157.35
Intramural expenses	754.14

Major sports expenses	18,366.76	
Salaries	26,992.70	
Treasurer's office and Accounting office.....	1,833.36	
Farm loss for year and depreciation of stock and equipment—Note A	4,210.39	
Insurance	349.70	
Pump and gymnasium water supply.....	1,289.78	
Stadium fund (10% of gate receipts).....	6,501.29	
Tennis courts	2,996.78	
All other expenses.....	1,165.06	
Excess of receipts over expenditures permitting re- payment during the year of balance of old loan from the Trustees of the University amounting to \$6,341.09, and interest of \$123.07, carried as a liability on October 1, 1920.....	13,833.05	
		\$102,392.62

BALANCE SHEET—SEPTEMBER 30, 1921

Assets

Accounts receivable	\$5,438.04	
Bank of Palo Alto, open account.....	491.10	
Bank of Palo Alto, savings account.....	1,738.56	
Bank of Palo Alto, Stadium account.....	6,223.53	
Board of Trustees (tentative).....	668.81	
Farm—Inventory, including equipment.....	2,458.57	
Farm—Special account—Inventory, wood and hay (Note B)	4,715.15	
Petty cash	25.00	
Store—Inventory	1,530.22	
Sheep—Inventory	1,299.80	
Stadium construction to date.....	76,375.57	
Stadium—Interest	5.70	
Fire insurance, unexpired	548.24	
Paid in advance for 1921–22.....	1,663.32	
		\$103,181.61

Liabilities

Accounts payable	\$2,998.14	
Due Board of Trustees, current account.....	7,270.33	
Stadium fund, unexpended reserve for campaign exp.	8,284.66	
Stadium subscriptions to date.....	55,124.11	
Promissory note, Stadium account.....	28,000.00	
Surplus of assets over liabilities.....	1,504.37	
		\$103,181.61

SURPLUS ACCOUNT

1920			
Sept. 30	Deficiency on this date.....	\$5,530.33	
	Less war tax refunded 12/20/20.....	17.98	
			\$5,512.35
1921			
Sept. 30	Gain for year 1920–21.....	\$13,833.05	
	Less 50% of gain to Stadium account.....	6,916.52	
			\$6,916.53
	Old accounts collected during year.....		100.19
	Net surplus on October 1, 1921.....	1,504.37	
			\$7,016.72
			\$7,016.72

JOHN PEARCE MITCHELL,
Treasurer.

NOTE A.

A certain amount of farming has been carried on for some years in connection with the care of the Athletic Fields. The maintenance of a flock of sheep to eliminate weeds and eat down the turf is profitable, and involves the production of some hay to carry them through the winter. Also it has been found cheaper to own some stock and raise hay and grain to feed them, than to depend on renting teams and men by the day as needed. The farming operations have expanded from year to year as a result of Sam McDonald's ability to handle them successfully. In the fall of 1920 these operations were very greatly increased, partly because it appeared to be profitable to do so, and partly to coöperate with the University in the utilization of the vacant land at and near the campus. These operations proved to be unprofitable as a result of the economic conditions which came into existence during the spring of 1921, and resulted in a loss which is made up almost entirely by the decrease in inventory values of the farm products and equipment. The "Farm—Special Account" covers the operations undertaken in conjunction with the University.

NOTE B.

The inventory values carried as assets have been adjusted to present market conditions. A large part of this figure is covered by wood obtained in cutting the trees formerly on the Stadium site. The market for wood was very poor during the summer and sales were postponed until fall.

NOTE C.

The whole water supply at Encina Gymnasium has been connected to the well installed a year ago beside the swimming pool. This provides an adequate supply independent of the University system. The first cost covered the addition of two stages to the pump in the well, and a pipe line from the well to the storage tank near the Power House. These changes are expected to provide a very inexpensive and abundant supply of water.

NOTE D.

This completes the re-payment, with interest, of the loan of \$15,000 advanced by the Board of Trustees of the University to pay the obligations of the Associated Students outstanding in September, 1917, when the Board of Athletic Control was organized.

WOMEN'S ATHLETICS

The Faculty Committee on Women's Athletics which was appointed by the President of the University, for the academic year 1920-21 was as follows: The Misses Bradford, Buckingham, Bunting (chairman), McCracken, and Stoltenberg.

The Committee continued its policy of hearty endorsement of inter-class competitions in women's athletics, and approved schedules for such competitions in hockey, basket ball, base ball, tennis, archery, swimming and diving, and Swedish gymnastics.

The Committee also continued to grant permission for interclass-intercollegiate competitions with the University of California and Mills College. The following schedule was approved: Hockey, Stanford vs. California (two games), and Mills (two games); Basketball, Stanford vs. Mills (two games); Tennis, Stanford vs. California (four singles and four doubles); Swimming, Stanford vs. Mills (four teams). All of these competitions were held except the California hockey games which were called off on account of bad weather and the Mills Swimming Meet, for which Mills failed to send teams.

The Committee denied permission to the Women's Athletic Association to have varsity competition in basketball with the University of Nevada. Competitions with the College of the Pacific and the University of Southern California were attempted but failed to be arranged as these institutions could not meet Stanford on an inter-class basis. The Committee met with the Executive Committee of the Women's Athletic Association in order to insure a perfect understanding of the Committee's policy of sanctioning only inter-class competitions. The Women's Athletic Association now believes that the class organization is the best basis for athletic competitions for women, and that with a student body limited to five hundred women it is impossible to develop both class and varsity teams, and that therefore in future all intercollegiate competitions for women will have to be upon a class basis; which is the established policy of the Committee.

A request from one of the women students to have golf organized as a regular sport at Stanford, and arrangements made to play at the Menlo Park Country Club, was discussed by the Committee with the result that the Committee felt it could not sanction golf as an organized sport until such time as links are established on the campus. A report of the Committee's decision was sent to the President of the University as an expression for the demand for golf and the Committee's opinion of the best way to meet it.

HELEN MASTERS BUNTING,
Chairman.

LOWER DIVISION ADMINISTRATION.

The members of the Committee on Lower Division Administration for the year 1920-21 were: J. P. Mitchell, W. D. Briggs, B. O. Foster, H. Heath, E. P. Lesley, E. E. Robinson, V. J. West, M. S. Wildman. Miss Harriet Bradford, Dean of Women met and coöperated with the Committee throughout the year. The actual work of this Committee began on October 1, 1920, with the registration of new students. The numbers of students registered during the year by quarters were 467 in the autumn, 504 in the winter, 529 in the spring, and 370 in the summer.

In general the plans made for arranging courses in accordance with the University requirements worked out satisfactorily, and no serious difficulties were encountered. The first year of work is obviously insufficient to justify any general conclusions as to the ultimate success of the Lower

Division plan, but the experience has been encouraging and indicates that the fundamental objects of the organization will be attained.

Substantial progress was made in re-arranging the schedule, and the difficulties due to courses conflicting were materially lessened. Such conflicts have been reduced to a minimum for first-year students, but it is recognized that the very much larger number of courses open to second-year students precludes an equally satisfactory arrangement for the sophomore year.

The over-crowding of certain classes was controlled by the introduction of seat cards at the time of registration, the numbers of the cards issued corresponding with the capacity of the classes. Further progress in this connection will be made when the advantages and limitations of this plan are better understood.

At the beginning of the winter quarter the University records were improved by the addition of photographs of each student attached to the individual record cards. A method was devised by which these photographs, bearing a reproduction of the students' signatures, could be taken on registration day without appreciable delay and at a very low cost. It is felt that this means of identifying a record adds materially to its value.

Two new courses were developed during the year, one in Citizenship, the other in General Biology. ✓

The course in Citizenship is divided into three parts, entitled Economic Problems, Social Problems, and Political Problems; the first two presented by the Economics Department, the last by the Department of Political Science. Each division consists of four lectures a week for one quarter and covers the ground formerly included in the elementary courses in these departments. Each of the three classes has been large, approximately 175 students, and readers were provided for each. While the results have been satisfactory, it is felt that the arrangement is open to improvement in the light of further experience.

The course presented in General Biology is entirely new. It consists of three lectures each week for two quarters and three laboratory periods a week for one quarter, and is presented by a group of members of the Botany, Physiology and Zoology departments. The course has been successful, has attracted many students outside of the Lower Division, and arrangements had to be made for two sections, one in the autumn and winter, the other in the winter and spring quarters, and for the presentation of the laboratory work in each of these quarters. During the summer quarter an equivalent course was presented at the Hopkins Marine Station at Pacific Grove with great success.

In connection with the group requirement it was found difficult to arrange for nine units in each group during each of the first two years for some students intending to major in certain technical departments. If the experience of the next two years confirms that of the first, it will probably be wise to suggest that the group requirement be modified to read that each student shall be required to take eighteen units in each group during the first two years.

The schedules of the engineering department have been the most difficult to harmonize with the requirements of the Lower Division. With the fine coöperation of the Department of Mechanical Engineering the schedule difficulties were overcome for their students, but the result was a very undesirable accumulation of laboratory courses in the third and fourth years of their schedule. To overcome this difficulty temporary arrangements were approved which allow three years for the completion of the Lower Division requirements; and if experience confirms the apparent wisdom of these arrangements it will probably be wise to suggest a suitable revision of the requirements.

In handling the work which must be done on registration days it was found to be advantageous to use carefully prepared study-plan cards outlining the courses planned for future quarters, and a method of signing study cards in advance of the regular registration days. These devices have been of assistance and will probably have permanent value.

The number of petitions received from students requesting modifications of the requirements to meet their needs was smaller than expected and presented no difficulties beyond those necessarily involved in the establishment of any new educational plan. Toward these petitions the Committee adopted a liberal policy, and sought to carry out the intent, rather than the letter, of the requirements.

It should be recognized that a great deal of credit for the carrying out of the plans during the year is due to the untiring devotion of Miss Elizabeth Fordyce, who has served as the Committee's secretary.

JOHN PEARCE MITCHELL,
Chairman.

PUBLIC EXERCISES

The Committee on Public Exercises consisted of Professors Harold Chapman Brown, Arthur Martin Cathcart, Percy Alvin Martin, John S. P. Tatlock, Stewart Woodford Young, and Lee Emerson Bassett, chairman. During the summer quarter Professor Tatlock acted as chairman.

Aside from occasional assemblies called, with the approval of the Committee, by the president of the Student Body for the discussion of various student problems, the following University Assemblies have been held:

October 6. Assembly of Welcome. Addresses of welcome were made by President Ray Lyman Wilbur, Dean Harriet Bradford, Dean George Bliss Culver, and Rev. D. Charles Gardner. Mrs. Elizabeth Burritt Snell spoke briefly of the service offered to undergraduates by the Appointment Office.

December 8. William Parmer Fuller, Jr., of the American Relief Administration in Poland. "A Year in Poland."

January 6. Count Ilya Tolstoy. "The Truth about Russia."

January 19. Mr. Sherwood Eddy. "Present World Conditions."

February 1. European Student Relief Assembly. Addresses were given by Chancellor, Emeritus, David Starr Jordan, Mrs. Herbert Hoover,

Mr. Mortimer Allen Kline and Professor Henry Rushton Fairclough.
February 13. Dr. Wilfred Grenfell. "A Doctor on the Labrador Coast."
An illustrated lecture.

May 5. Mr. Hugo Goodwin, organist, and Master Douglas Smith, soprano. A recital in the Memorial Church.

May 19. Mr. Chester H. Rowell, member of the Railroad Commission of the State of California. "The Young Man in Politics."

June 1. Year-End Assembly. President Wilbur gave a brief address on some University problems. The remainder of the assembly hour was turned over to the students for a discussion of student affairs.

Tuesday Evening Meetings.

The Tuesday Evening Meetings were held regularly throughout the year, either in the Little Theater or the Assembly Hall. While the indifference on the part of the students to the opportunity afforded by these meetings is to be deplored, the attendance of members of the faculty and of the community and the interest they have shown in the lectures and musical events are, in the opinion of the Committee, ample justification for continuing the meetings. The program for the year follows:

October 5. Miss Bessie A. Dwyer, an address, "Yesterday and Today in the Philippines, 1520-1920." (Illustrated.)

October 12. President Ray Lyman Wilbur, an address, "Vivi-section Legislation and Public Welfare."

October 19. Mr. Vaughan MacCaughy, Superintendent of Public Instruction, Territory of Hawaii, an address, "Polynesia." (Illustrated.)

October 26. Miss Frances Martin, assisted by Mr. Warren D. Allen, a piano recital.

November 8. The Right Reverend W. H. Moreland, Bishop of Sacramento, an address, "Glimpses of Europe Since the War."

November 16. Dr. Raul Ramirez, Professor of English in the University of Santiago, Chile, and visiting Professor of History, University of California, an address, "Understanding South America of Today."

November 23. Mrs. Elsie Cook Hughes, pianiste, a recital.

November 30. San Francisco Symphony Orchestra, a concert, under the auspices of the Stanford Symphony Committee.

December 7. Professor Raffaello Piccoli, Professor of English, University of Pisa, Italy, and visiting Professor of Italian, University of California, an address, "Democracy in Italy, Medieval and Modern."

January 11. Dr. Shepherd Ivory Franz, Professor of Physiology and Psychology in the George Washington University, and director of Laboratories in the Government Hospital for the Insane, Washington, D. C., an address, "Re-education."

January 18. Miss Grace G. Becker, 'cellist, Mr. Albert King, pianist, a concert.

January 25. The San Francisco Symphony Orchestra, assisted by the Stanford Glee Club, a concert, under the auspices of the Stanford Symphony Committee.

- February 1. Dr. Victor Andres Belaúnde, Professor of International Law and Political Science in the Universidad de San Marcos, Lima, Peru, an address, "Hispanic-American Culture and Ideals."
- February 8. Mr. Nathan Firestone, violinist, Mrs. Ludwig Rosenstein, pianist, Mrs. Ruth May Friend, vocalist, Mrs. Charles Moser, accompanist, a concert.
- February 15. Professor Henry Rushton Fairclough, an address, "Montenegro and the Dalmatian Coast." (Illustrated.)
- February 22. Schubert Club, Stanford Glee Club, University Orchestra, University Band, and a one-act play under the direction of Mr. Gordon Davis. A musical and dramatic program arranged by Mr. Warren D. Allen.
- March 1. Professor Karl Gustav Rendtorff, an address, "Germany As I Saw It."
- March 7. The Rev. Lloyd C. Douglas, Pastor of the First Congregational Church, Ann Harbor, Michigan, an address, "Some American Obsessions."
- March 29. Colonel Charles Wellington Furlong, an address, "Turkey, the Crossways of the World." (Illustrated.)
- April 12. Professor Percy Alvin Martin, an address, "Past and Present Day Brazil." (Illustrated.)
- April 19. Dr. John Adams Scott, Professor of Greek, Northwestern University, and Sather Professor of Classical Literature, University of California, an address, "Character Delineation in Homer," given under the auspices of the Classical Club.
- April 26. Mr. William W. Ellsworth, formerly President of the Century Company, an address, "The Writing Game."
- May 3. Mr. William Leonard Schwartz, an address, "Life in a Shinto Temple." (Illustrated.)
- May 10. Philharmonic Trio, Mr. Orley See, violin, Mr. Wenceslao Villalpando, 'cello, Mr. William W. Carruth, piano, a concert.
- May 17. Near East Relief Assembly. Brief addresses by Judge Curtis D. Wilbur and Miss Mabel Farrington on "Armenia."
- May 24. Rev. Willard L. Sperry, Pastor of the Central Congregational Church, Boston, an address, "English and American University Methods and Ideals."
- May 31. "Faust" in concert form. Given under the auspices of the Stanford Symphony Committee.
- June 28. Mr. George L. Dillman, an address, "The Principle."
- July 5. Mr. Charles B. Turrill, an address, "Early Days in California."
- July 12. Professor Arthur N. Holcombe of Harvard University, an address, "Human Nature and the Income Tax."
- July 26. Professor John D. Fitz-Gerald of the University of Illinois, an address, "Hispano-American Ideals."
- August 2. Mr. Madison Grant, of New York City, an address, "The Relations Between European and Asiatic Races."
- August 9—Professor Julius Stieglitz, of the University of Chicago, an address, "The Significance of Chemistry in the Life of the Nation."

August 16—Mrs. David Starr Jordan, reading from Chancellor Emeritus Jordan's Autobiography, "Stanford University from 1893 to 1899."

Special Lectures.

Of various special lectures given under the auspices of different departments of the University the following have been brought particularly to the attention of the committee:

October 28. Dr. Tasuku Harada, ex-president of Doshisha University, Tokyo, Japan, an address, "Japanese Characteristics and Anglo-Saxon Ideals."

February 1. Mr. Victor Andres Belaúnde, Professor of International Law and Political Science in the Universidad de San Marcos, Lima, Peru, an address, "Inca Communism and the Bolshiviki Regime", under the auspices of the Departments of History and Romanic Languages.

February 2. Dr. Victor Belaúnde, an address, "Economic Conditions in Peru."

April 13. Miss Dorothea Spinney, a recital, "Alcectis", by Euripides, auspices of the Classical Club.

May 2. Professor Raymond G. Gettell, Professor of Political Science, Amherst College, an address, "The United States as a World Power," auspices of the Political Science Honor Society.

Founders' Day.

The Committee ventured to try once more the experiment of observing Founders' Day as a holiday and of arranging for an assembly and other appropriate events. With the assistance of members of the faculty and of the student body a program was planned which filled most of the day, the most attractive feature of the occasion being the concert given by the San Francisco Symphony Orchestra in the evening in the Memorial Church. The Assembly and all other events were well attended and the Committee felt that the interest shown by members of the University in the effort to observe Founders' Day in a fitting manner and as a distinctive Stanford day justified the undertaking. It is to be hoped that hereafter it will be possible to celebrate the day annually by appropriate exercises and that, in addition to the observance of the occasion by resident members of the University, it may come to be regarded as a "home-coming" day for former students and alumni. The program for Founders' Day follows:

10:00 a. m. University Assembly.

Overture, Fantasia "Gypsy Life," Thiere.

University Band.

Address, Chancellor, Emeritus, David Starr Jordan, "How the Endowment Was Saved."

Music, "My Country", Koerner. Glee Club.

Address, Rev. Willard Brown Thorp, "The Bystander's View of Stanford."

"Hail, Stanford, Hail." Smith.

- 11:30 a. m. Laying of Cornerstone of the New Union.
 Addresses by Acting-President Charles David Marx, Comptroller Almon Edward Roth, and Mr. William Mayo Newhall, President of the Board of Trustees. The stone was laid by Mr. Newhall.
- 1:00 p. m. Tennis Game, at the Encina Courts.
- 2:00 p. m. Irish Marathon Race, at the Track Oval.
- 3:30 p. m. Base ball Game, Cliff Ireland's Independents vs. Varsity.
- 4:30 p. m. Polo Match, at the Polo Field.
- 8:00 p. m. San Francisco Symphony Orchestra, in the Memorial Church.

Commencement.

The thirtieth annual commencement exercises were held in the Memorial Church on Monday, June 20th, when the largest number of degrees in the history of the University were conferred. The address was given by President Ray Lyman Wilbur.

Debating.

A detailed statement of debating activities for the year may be found in the University Register for the current year.

In closing this report, the Committee wishes to express its sincere appreciation to those members of the University and community who, by direct service or expressed and evident interest, have assisted the Committee in the performance of its duties. Especially does the Committee wish to thank members of the University Band, the Orchestra, and the Glee Club, for their generous assistance whenever called upon.

LEE EMERSON BASSETT,
 Chairman.

PUBLIC HEALTH

The members of the Public Health Committee for the year 1920-21 were John Pearce Mitchell, Miss Harriet Bradford, Dr. Alfred David Browne, George Bliss Culver, Dr. Clelia Duel Mosher. Of these Mr. Mitchell, Miss Bradford, and Dr. Browne were also members of the Board of Directors of the Students' Guild.

Only the regular routine work came before the Committee during the year, and this consisted chiefly in the enforcement of the University vaccination requirement.

JOHN PEARCE MITCHELL,
 Chairman.

COMMITTEE ON RESEARCH

The membership of the Committee on Research for the academic year 1920-21 included D. H. Campbell, W. F. Durand, E. C. Franklin, A. W. Meyer, W. Ophüls, T. J. Hoover, R. E. Swain, J. S. P. Tatlock, C. F. Tolman, D. L. Webster, R. L. Wilbur.

For the general purpose of fostering research in the University and with the especial object in view of giving aid to individual investigators whose needs may not have been provided for in the annual departmental

appropriations, the President, with the approval of the Board of Trustees, set aside a sum of two thousand dollars (\$2000) to be allotted by the Committee to applicants whose projects appealed to the Committee as most meritorious.

During the year appropriations to individuals have been made as follows:

Date	Recipient of Grant	Purpose	Amount
Nov. 8.	Dr. T. Addis.....	Technical assistance	\$250.00
Nov. 8.	G. F. Ferris.....	Part expenses for Entomological Expedition....	300.00
Nov. 8.	H. K. Faber.....	Apparatus for measurement of hydrogen ion concentration	200.00
Nov. 8.	W. L. Holman.....	Laboratory supercentrifuge	150.00
Nov. 8.	J. R. Oliver.....	Binocular microscope stand	206.00
Nov. 8.	The Committee.....	Fuller collection of electrical apparatus.....	800.00
Dec. 8.	George Hempl.....	Photographs of seals in Athens.....	100.00
Dec. 8.	Dr. A. C. Crawford.....	Preparation of dichlor picric acid.....	100.00
Jan. 24.	A. M. Espinosa.....	Photographs of manuscript of Spanish poem....	75.00
Mar. 31.	E. G. Martin.....	Duboscq colorimeter	125.00
June 28.	C. V. Burke.....	Drawings of fish	100.00
			<u>\$2,406.00</u>

FINANCIAL STATEMENT

Receipts

Appropriation	\$2,000.00
Sales of electrical instruments.....	534.63

Expenditures

Eleven grants itemized above.....	\$1,606.00
Fuller electrical instruments	800.00
	<u>\$2,406.00</u>

Balance.....	\$128.63
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EDWARD CURTIS FRANKLIN,
Chairman.

SCHOLARSHIP

The Committee for the year 1920-21 consisted of Harriet Bradford, George B. Culver, Orrin L. Elliott, John C. L. Fish, Edgar E. Robinson, Lewis M. Terman and Clarke B. Whittier, chairman. Marian McKendry acted as secretary.

The chief change in policy connected with the work of this Committee during the year concerned the ineligibility of students on probation to take part in certain student activities. This rule of ineligibility accomplished but little in raising scholarship, caused a good deal of irritation in certain student circles and involved considerable quite imperfect administrative work. It was abolished. At the same time the scholastic requirements for remaining in the university were materially raised: this will probably eliminate a considerable number of the students who were formerly subject to the ineligibility rule.

Other matters upon which the Committee took action were: (a) definite regulations governing the reinstatement of students who have been disqualified, (b) limitations upon the use of the campus by disqualified students, (c) requirements for the award of regional scholarships, (d) limitations on the privilege of holding scholarships throughout the year for which they have been awarded.

STUDENT SCHOLARSHIP

The usual tables indicating the scholarship of the student body for the past year follow:

DISABILITIES INCURRED BY STUDENTS
TABULATED ACCORDING TO CHARACTER OF DISABILITY

	Autumn	Winter	Spring	Summer	Total
Disqualifications	63	42	44	17	166
Failure	61	32	Use discontinued	--	93
Probation	247	248	272	98	865
Totals.....	371	322	316	115	1,124

The total number of students whose deficiencies resulted in Committee action has increased from 882 last year to 1124. But the number of disqualifications has slightly decreased except in the summer quarter where the increased attendance accounts for the increase in disqualifications. We may expect more disqualifications and fewer cases of probation next year under the new requirements. It must be remembered that many students incur more than one disability during the year: the total does not mean that 1124 different students have been deficient.

DISABILITIES INCURRED BY STUDENTS
TABULATED ACCORDING TO RESIDENCE

	Autumn		Winter		Spring		Summer	
	No. in Group	Per cent deficit	No. in Group	Per cent deficit	No. in Group	Per cent deficit	No. in Group	Per cent deficit
WOMEN								
University Res. Hall; Roble....	152	3.95	144	8.33	156	4.45	146	11.64
Sororities	215	2.80	225	2.67	215	6.04	4	0.00
Other locally resident students..	84	2.40	77	0.00	79	2.53	66	7.57
Commuters	28	0.00	29	3.45	25	8.00	27	3.70
Total Women.....	479	2.92	475	4.00	475	5.05	243	9.05
MEN								
U. Res. Halls; Encina, Sequoia	690	17.24	699	16.02	648	16.82	235	15.19
Fraternities	626	15.81	605	15.37	487	21.15	111	16.21
Clubs	23	26.08	25	25.00	24	25.00	5	20.00
Other locally resident students..	329	34.64	332	19.58	325	13.23	258	9.30
Commuters	121	16.53	117	23.93	121	25.62	87	4.59
Total Men.....	1,789	20.01	1,778	17.04	1,605	18.19	756	12.30
Total University	2,268	11.95	2,253	14.29	2,080	15.19	999	11.51

This table also shows a general increase in disabilities incurred by students as compared with the previous year. The ratio of disabilities incurred to the number of students in the whole university was 10.58 to 100 last year and 13.23 to 100 this year. The increase is in cases of pro-

bation. That this does not mean a lowering of scholarship is evident from the fact that the ratio of grade points to registered units in the entire university has been raised from 1.42 last year to 1.46. It does mean that more students who are below normal have been given the serious warning of probation.

RATIOS OF GRADE POINTS TO REGISTERED UNITS FOR THE
VARIOUS STUDENT GROUPS
GENERAL

	Number of Students	Average Ratio of Grade Points to Registered Units			
		Year	Autumn Quarter	Winter Quarter	Spring Quarter
University	2489	1.46	1.42	1.48	1.50
Women	490	1.74	1.72	1.76	1.74
Men	1999	1.39	1.35	1.41	1.43
Non-sorority	243	1.86	1.83	1.87	1.87
Sorority	247	1.63	1.60	1.65	1.62
Non-fraternity	1301	1.44	1.39	1.45	1.48
Fraternity	698	1.32	1.27	1.34	1.35
Debating and Literary Societies....		1.66	1.60	1.75	1.64
Honor and Professional Societies...		1.64	1.60	1.58	1.68
Dramatic Clubs		1.55	1.52	1.57	1.55
Musical Organizations		1.53	1.56	1.53	1.48
Student Honor Societies		1.52	1.51	1.50	1.54
Athletic Teams		1.40	1.31	1.40	1.53

CLASSIFICATION BY RESIDENCE

Rank		No. in Group	Rank Within Group				Average Ratio of Grade Points to Registered Units			
			Year	Autumn Quarter	Winter Quarter	Spring Quarter	Year	Autumn Quarter	Winter Quarter	Spring Quarter
	WOMEN									
	University Residence Hall									
6	Roble	168					1.85	1.85	1.84	1.86
	Sororities									
12	Alpha Phi	17	1	1	1	3	1.74	1.72	1.77	1.72
15	Kappa Kappa Gamma.....	28	2	2	6	4	1.68	1.71	1.61	1.71
16	Sigma Kappa	16	3	6	9	1	1.66	1.56	1.57	1.85
17	Chi Omega	28	4	4	8	5	1.65	1.65	1.58	1.69
19	Pi Beta Phi.....	24	5	7	2	7	1.64	1.56	1.76	1.59
21	Delta Gamma	31	6	9	3	6	1.63	1.46	1.73	1.68
23	Kappa Alpha Theta.....	31	7	3	7	8	1.61	1.66	1.61	1.57
24	Gamma Phi Beta.....	29	8	5	5	9	1.60	1.65	1.66	1.51
33	Delta Delta Delta.....	19	9	10	10	2	1.53	1.41	1.50	1.73
38	Alpha Omicron Pi.....	24	10	8	4	10	1.50	1.56	1.69	1.34

CLASSIFICATION BY RESIDENCE

Rank		No. in Group	Rank Within Group				Average Ratio of Grade Points to Registered Units			
			Year	Autumn Quarter	Winter Quarter	Spring Quarter	Year	Autumn Quarter	Winter Quarter	Spring Quarter
	Other Locally Resident Students — Homes and Approved Houses									
4	On the Campus	8	1	2	1	1	1.80	1.50	2.22	2.04
7	Palo Alto and Mayfield....	44	2	1	2	2	1.85	1.84	1.88	1.83
	Commuters — Homes and Approved Houses									
5	San Francisco, San Jose, etc.	23					1.88	1.79	1.85	2.02
	MEN									
	University Residence Halls									
49	Encina	629	1	1	1	1	1.44	1.40	1.46	1.46
54	Sequoia	147	2	2	2	2	1.42	1.39	1.42	1.46
	Fraternities									
29	Alpha Kappa Lambda	16	1	1	6	1	1.57	1.59	1.44	1.68
45	Phi Kappa Sigma	31	2	2	7	5	1.46	1.44	1.44	1.49
46	Sigma Alpha Epsilon	25	3	3	2	4	1.46	1.39	1.51	1.53
50	Theta Chi	26	4	10	1	10	1.41	1.28	1.57	1.38
57	Delta Upsilon	36	5	16	4	3	1.40	1.18	1.48	1.54
58	Phi Delta Theta	42	6	7	9	11	1.39	1.37	1.43	1.36
61	Alpha Tau Omega	31	7	14	8	6	1.37	1.22	1.44	1.44
62	Chi Psi	26	8	15	12	2	1.37	1.22	1.36	1.60
63	Delta Kappa Epsilon	23	9	12	5	7	1.37	1.25	1.46	1.42
64	Theta Xi	37	10	13	3	12	1.36	1.24	1.49	1.36
65	Delta Chi	28	11	8	15	8	1.34	1.32	1.29	1.42
66	Beta Theta Pi	37	12	4	16	17	1.32	1.38	1.29	1.25
67	Alpha Delta Phi	37	13	5	14	18	1.31	1.38	1.30	1.24
68	Phi Gamma Delta	27	14	6	18	16	1.31	1.38	1.23	1.36
70	Alpha Sigma Phi	32	15	21	10	13	1.28	1.07	1.43	1.35
71	Phi Kappa Psi	36	16	9	17	15	1.28	1.30	1.27	1.26
72	Sigma Nu	34	17	11	13	19	1.28	1.28	1.31	1.22
73	Kappa Alpha	22	18	20	19	9	1.24	1.12	1.23	1.40
74	Delta Tau Delta	26	19	18	11	22	1.22	1.17	1.41	1.05
76	Kappa Sigma	31	20	19	23	14	1.18	1.14	1.15	1.29
77	Zeta Psi	33	21	17	20	20	1.16	1.18	1.16	1.12
80	Theta Delta Chi	25	22	22	21	21	1.11	1.06	1.16	1.11
81	Sigma Chi	37	23	23	22	23	1.03	.96	1.16	.95
	Clubs									
75	Japanese Students' Ass'n..	21	1	1	2	2	1.20	1.07	1.39	1.09
78	Chinese Club	8	2	2	1	1	1.15	.91	1.46	1.14
	Other Locally Resident Students									
47	Palo Alto and Mayfield....	287	1	1	2	1	1.45	1.40	1.46	1.50
48	On the Campus	67	2	2	1	2	1.45	1.35	1.52	1.50
	Commuters									
50	San Francisco, San Jose, etc.	142					1.44	1.42	1.38	1.52

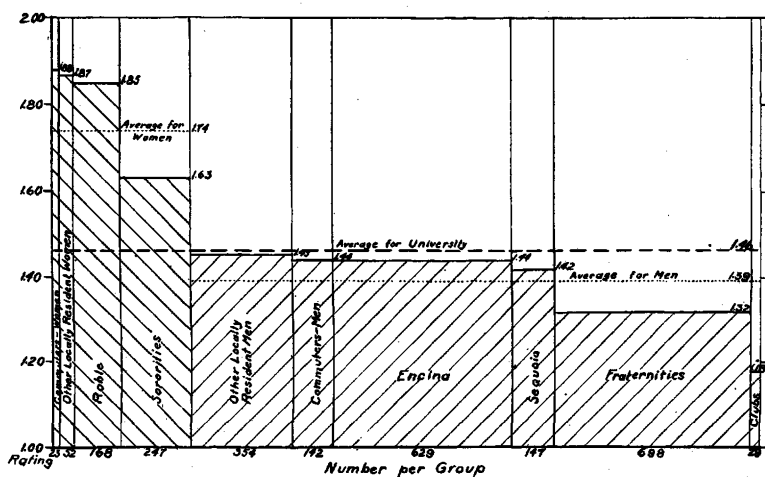
STUDENT ORGANIZATIONS

Rank		Rank Within Group				Average Ratio of Grade Points to Registered Units			
		Year	Autumn Quarter	Winter Quarter	Spring Quarter	Year	Autumn Quarter	Winter Quarter	Spring Quarter
	Honor and Professional Societies								
1	Phi Beta Kappa	1	1	1	1	2.40	2.53	2.30	2.30
2	English Club	2	3	2	2	1.92	1.88	1.96	1.91
3	Phi Lambda Upsilon (M.-Chem.)	3	2	4	3	1.90	2.15	1.75	1.88
10	Electrical Engineers	4	6	3	4	1.80	1.75	1.79	1.85
20	Mechanical Engineers	5	4	8	6	1.64	1.78	1.54	1.62
22	Geology and Mining Society.....	6	11	6	5	1.02	1.46	1.67	1.67
25	Theta Sigma Phi (Women-Jour.)	7	9	5	8	1.60	1.57	1.68	1.55
32	Phi Kappa Tau (Military).....	8	7	11	7	1.54	1.66	1.39	1.57
40	Phi Alpha Delta (Law)	9	5	9	12	1.49	1.78	1.47	1.30
41	Phi Delta Phi (Law).....	10	10	10	9	1.48	1.49	1.46	1.49
42	Alpha Chi Sigma (Men-Chem.)..	11	8	12	10	1.48	1.63	1.37	1.45
55	Sigma Delta Chi (Men-Jour.)....	12	12	7	11	1.42	1.36	1.57	1.35
	Debating Societies								
11	Delta Sigma Rho (Men).....	1	1	2	1	1.79	1.96	1.68	1.78
13	Euphronia (Men)	2	2	1	2	1.74	1.68	1.75	1.78
37	Nestoria (Men)	3	3	3	3	1.51	1.53	1.49	1.53
	Dramatic Clubs								
28	Sword and Sandals (Men).....	1	1	1	1	1.59	1.52	1.60	1.67
35	Ram's Head Society (Men).....	2	2	2	2	1.52	1.52	1.55	1.48
	Musical Organizations								
14	Stanford Music Club	1	2	1	1	1.70	1.66	1.70	1.74
18	Stanford Choir	2	1	2	2	1.65	1.68	1.63	1.64
36	Schubert Club (Women)	3	3	4	5	1.51	1.57	1.44	1.12
43	Stanford Orchestra	4	5	3	3	1.48	1.40	1.48	1.55
53	Stanford Band	5	4	5	4	1.43	1.49	1.42	1.38
	Publications								
9	1922 Quad	1	1	1	1	1.80	1.78	1.79	1.83
27	Chaparral	2	3	3	2	1.59	1.56	1.57	1.67
31	Press Club (Men)	3	2	2	4	1.55	1.58	1.70	1.39
39	Daily Palo Alto	4	4	4	3	1.49	1.50	1.48	1.49
	Athletic Teams								
26	Varsity Baseball	1	1	1	3	1.59	1.49	1.65	1.56
34	Varsity Track	2	2	3	1	1.52	1.49	1.49	1.59
51	Freshman Basketball	3	3	2	6	1.44	1.39	1.50	1.44
52	Freshman Track	4	5	5	2	1.43	1.36	1.34	1.59
59	Varsity Basketball	5	4	4	7	1.38	1.39	1.47	1.22
69	Varsity Football	6	6	6	5	1.29	1.23	1.22	1.46
79	Freshman Football	7	7	7	4	1.11	.78	1.09	1.56
	Student Honor Societies								
8	Cap and Gown (Women).....	1	1	1	1	1.84	1.77	2.03	1.76
30	Quadrangle Club (Men)	2	2	2	2	1.57	1.57	1.54	1.59
44	Circle "S" Society (Men).....	3	3	3	3	1.48	1.46	1.46	1.51
60	Skull and Snakes (Men).....	4	4	4	4	1.38	1.44	1.30	1.39

A clerical error in last year's table (p. 247 of the President's Report for the year 1919-20) may here be corrected. The figures for the University should be: Year, 1.42; Autumn Quarter, 1.35; Winter Quarter, 1.44; Spring Quarter, 1.46. The corresponding figures in the present table show a real improvement. Of the large groups the sororities alone have declined in scholarship: every other group shows an advance.

The following further comments on the table may be made: (a) The women as usual excel the men. (b) The women in Roble Hall are considerably ahead of the highest sorority. (c) Encina and Sequoia Halls have better records than all but three fraternities. (d) Students living neither in the University residence halls nor in the sorority and fraternity houses average high. (e) Of the total of 81 groups listed only one fraternity is in the upper half of the list. (f) The general fraternity average has for the first time since the grade point system was adopted passed the 1.30 mark. (g) Two fraternities are lower than the Chinese Club, a group of students with a considerable linguistic handicap.

The following chart shows graphically some important features of the preceding table. It is appreciated that commuters and also other locally resident students are not organized groups: on the other hand they are composed of students who are doing their university work under substantially similar living conditions.



Comparison of Scholarship Rating and Size of Groups

SCHOLARSHIPS

Much of the labor in this branch of the Committee's work which would naturally have fallen upon the Chairman was generously and ably done by Professor Robinson.

STANFORD SCHOLARSHIPS, AWARDED SOLELY ON THE BASIS OF HIGH SCHOLASTIC ATTAINMENT

These are awarded to the fifteen students who, in the judgment of the Committee, have made the most creditable records for the past year. Students who have not completed two quarters of work, those graduating within a year and so eligible for Phi Beta Kappa, and graduate students are excluded.

Balnat, Cecil H.
Barker, Richard H.
Blinks, Lawrence R.
Carskadon, Thomas R.
Chase, Mary K.
Clifford, Connell
Craven, Margaret

Goodman, Daniel L.
Hunt, Harry J.
Hyde, William A.
McDonald, Marjorie K.
Struble, Homer P.
Trist, Marian A.
Vaughn, Samuel E.
Watters, Hallie

PECUNIARY SCHOLARSHIPS

In awarding these scholarships the Committee considers both scholastic attainment and need. The holding of one implies a record well above the average. Those not administered by the Committee are indicated.

Name	Establish'd	Amount	Holder, 1920-21
Leland Stanford Junior Memorial	1900	\$300.00	{ Leo G. Gianini J. C. Gilbert
Alumni Jordan* -----	1912	150.00	{ Charles F. Sebastian M. T. R. Maynard
Alumni Jordan* -----	1912	150.00	{ Archibald W. Warnock Paul F. Erickson
W. J. Dickey -----	1914	300.00	{ Algot J. Peterson Matthew C. Simpson
W. J. Dickey -----	1914	300.00	{ Stephen M. Barooshian Mary L. Cornes
Brodie G. Higley ('99)-----	1915	150.00	{ Muriel E. Edwards Alan C. Richardson
Bertha Hyde Braly -----	1916	275.00	{ Frederick E. Supple Albert B. Cox
Mrs. J. E. McDowell (Roble Club)---	1916	150.00	{ Albert W. Leeds Raymond Lewelling
John Maxson Stillman (Chemistry)†	1917	150.00	{ Dell T. Lundquist Vesta C. Wills
George E. Crothers (Law)†-----	1917	200.00	{ Gretchen Kaufman Marjorie F. Wells
Cyril F. Elwell ('07) (Elec. Eng.)†--	1918	300.00	{ Richard R. Orandall Halfdan I. Gregerson
Wilmer J. Gross -----	1919	150.00	{ Virginia B. Lowers Atwell G. Westwick
Gertrude Gardner -----	1919	200.00	{ Edwin L. Gustus Earl F. Demond
Marcelle Henriette Boullier-----	1919	160.00	{ Marjorie F. Wells T. A. Emerson
William Irwin Weaver (Chemistry)†--	1919	150.00	{ James R. Henderson Cecl R. Brolyer
Dorothy Metz ('17) -----	1920	200.00	{ Maurice L. Tainter Anna F. Ramsey
Ernest A. Love ('18)-----	1920	150.00	{ Louise A. Cannon Everett S. Layman
Hiram C. Fisk ('10)*-----	1920	180.00	{ Harold C. Perry Albert B. Cox
Treat* -----	1920	120.00	{ See holders listed below (each)
Ira S. Lillick -----	1920	500.00	
Mrs. Ira S. Lillick -----	1920	500.00	
University Graduate -----	1920	200.00	
Gray's Harbor Regional-----	1921	300.00	R. E. Blackburn
Mabel Hyde Cory -----	1921	500.00	Virginia Lowers

* Not subject to Committee approval.

† Nominated by the department and approved by the Committee.

There are thirty of the University graduate scholarships. These scholarships were held for one or more quarters of the year 1920-21 by the following students:

Aho, Leonard
 Anthony, A. B.
 Backlund, W. B.
 Boyle, Darl M.
 Bunds, C. C.
 Carlson, Everett
 Carter, Rae B.
 von Christterson, Sigurd
 Cloud, G. H.
 George, J. M.
 Goldstein, Joseph
 Hall, Helene M.
 Hansen, Hazel D.
 Hedrick, Marion I.
 Heron, Ivan C.
 Jackson, Newton B.
 Jefferson, Edward M.
 Johnston, Frank R.

Kahle, Richard F.
 Kerr, Paul F.
 Love, Charles A., Jr.
 McElin, Alice
 Mandl, Josephus P.
 Nethercut, Ruth A.
 Parsons, Eleanor M.
 Petty, Mary
 Reilly, Hubert B.
 Schwartz, Laura V.
 Smith, Harrison P.
 Sweeney, John P.
 Templin, Earnest H.
 Tresidder, Donald B.
 Uppman, Ingegerd M.
 Westwick, Atwell G.
 Wickersham, Zelda L.
 Williams, Phillip S.

LOANS

The loan fund for women students is administered by the Dean of Women. The other loan funds are administered by the Dean of Men under the general supervision of the Committee. Schedule X of the Comptroller's Financial Tables, printed in connection with the President's report, shows the use made of these funds during the year.

CLARKE BUTLER WHITTIER,
 Chairman.

STUDENT AFFAIRS

During the past year the Committee has consisted of Professors Harold Heath, Robert Eckles Swain, John S. P. Tatlock, Murray Shipman Wildman, and Marion Rice Kirkwood.

Continuing the practice referred to in its report for 1919-20, the Committee has acted in an advisory capacity to the President of the University in regard to matters of general policy and legislation affecting student affairs. It no longer officially advises upon the administration of discipline in individual cases of misconduct. A number of proposed changes in the University regulations have been considered during the year but no material modifications have been made.

The Committee cannot permit this opportunity to pass without recording its very great regret at the resignation of Miss Harriet Bradford as Dean of Women. Miss Bradford's administration of the difficult duties of this position has been marked by a high degree of courage and efficiency. Particularly noteworthy has been her active interest in the intellectual life

of the women of the University. Her influence in this regard will be remembered with gratitude by many students as a constant stimulus toward the finest ideals of scholarship.

MARION RICE KIRKWOOD,
Chairman.

VOCATIONAL GUIDANCE

The Committee for the academic year 1920-21 consisted of Professor J. G. Brown, chairman, Miss Harriet Bradford, Mr. G. B. Culver, Professor W. R. Eckart, Professor C. A. Huston, and Mrs. E. B. Snell.

Only regular routine work was done by the Committee during the year. The Vocational Conference for Women was transferred to the Vocations Committee of the Young Women's Christian Association.

JOSEPH GRANT BROWN,
Chairman.

APPENDIX IV.

ADMINISTRATIVE REPORTS

LIBRARIAN

The Growth of the Library

Miss Hadden, chief of the Order division, makes the following statement of accessions:

Stanford University—

Volumes in library September 1, 1920.....	271,685
Added by purchase.....	9,147
Added by gift and exchange.....	2,342
Added by binding	1,943
Total volumes added	13,432
Less volumes withdrawn	147
Net increase	13,285

Volumes in library August 31, 1921.....	284,970
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Lane Medical Library—

Volumes in library September 1, 1920.....	48,187
Added by purchase	1,494
Added by gift and exchange.....	509
Added by binding	1,021
Total volumes added	3,024

Volumes in library August 31, 1921.....	51,211
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Total volumes in University Library, August 31, 1921.....	336,181
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Included in the foregoing statement are 908 volumes added to the Law library, bringing the number in that collection to an aggregate of 24,268.

Some of the more noteworthy purchases are the following:

L'Alighieri; rivista di cose dantesche, anno 1-4, Apr. 1889-Feb. 1893; continued as

Giornale dantesco, anno 1-23, 1894-1915, and Indici ventiduennali, 1889-1910.

Biblia Latina. Brescia, 1496.

Canada. Journals and Sessional papers, 1841-1866. 135 vols.

Heywood, Thomas. England's Elizabeth. London. 1631.

La Lectura; revista de ciencias y de artes, año 2-17. 1902-1917.

Livy. Livi Patavini Decadis X cum Ant. Sabelli annototionibus. Venetiis, 1491.

Manget. Bibliotheca chemica curiosa . . . Geneva 1702.

Le Moniteur universel, 1800-1868, & Tables. 145 vols.

New York Herald. 1866-June 1900. 94 vols.

Ovidius Naso, Publius. Metamorphosen libri XV. . . Venetiis, 1493.

Whilst on his travels abroad Mr. Clark carried a "Want list" comprising about 6,000 volumes, an accumulation during the twelve years preceding of items which had been sought for but which we had been unable to obtain through the usual channels. It was not expected that all of them would be found, but a good proportion was acquired. His efforts were not confined to the "want list" the rate of exchange making the time opportune for the acquisition of other desirable material. In London several good sets of periodicals were picked up, notably all four series of Hooker's *Journal of Botany*, and the rare ninety volumes of the proceedings of the Royal Society of London covering the period from 1665 to 1800. Arrangements were made for the completion of the various series of our file of *Calendars of State Papers*, and most of the eighteenth century editions of Shakespeare wanted by the English department were found, as was also the more recent but scarce edition by Halliwell. Through purchases in Paris several of the files of medical journals at the Lane Library were completed and some Stanford sets, such as the *Journal des Savants* from 1842 and the *Revue des deux Mondes* from 1829. Another set long sought for unavailingly here acquired was Tarbé's *Collection des Poètes Champenois*, 24 vols. published at Rheims 1847-64 in an edition limited to 150 copies. In Paris also the opportunity was presented for acquiring certain special collections which happened then to be on the market at exceptionally low prices when the francs were translated into dollars. Three such aggregating 5000 vols. were purchased—The Grimaux collection rich in material on Lavoisier and the history of chemistry; the Clouzon collection of early French and other Romanic literature; and a third collection from the library of a prominent French publicist on travel and political science. Altogether upwards of 10,000 volumes were secured as a result of the Librarian's travels. The acquaintance established with foreign dealers and the knowledge acquired relative to trade conditions will be a lasting asset.

In connection with the year's acquisitions record should be made also of the purchase of the library of the late *Senateur Eugène Lintilhac* formerly an official of the French Department of Education and an author best known probably by reason of his "*Histoire du théâtre en France*" and his works on *Le Sage* and *Beaumarchais*. The collection numbers about 5000 volumes and includes much French dramatic literature.

EXPENDITURES

The expenditures for books, periodicals and binding, according to the Comptroller's statements, are as follows:—

Stanford University—

Books and periodicals:

On account Jewel fund	\$32,810.56
On account Law fees	4,729.71
On account Syllabus fees	1,018.88
On account of other funds	78.52

Binding	5,762.49
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Lane Medical Library—

Books and periodicals:

On account L. C. Lane and other funds.....	6,929.98
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On account Barkan fund.....	483.45
On account Gibbons fund.....	191.73
Binding	1,344.51
Total.....	53,349.83

Lest comparison be made between the number of books added to the library and the amount expended, it should be explained that some 10,000 volumes, including the Lintilhac collection as well as some of the other French purchases have not yet been accessioned and hence are not counted among the books added, although their cost is a part of the year's outlay.

GIFTS

To Mr. and Mrs. F. E. Booth (Grace Davis, '96), the Library is indebted for a collection of 2000 posters including edicts, announcements, etc., issued by the Germans at Brussels during their occupation. From the estate of Thomas Welton Stanford has come his private library of 540 volumes. The French government through its consul in San Francisco has presented 146 volumes. Through the kind offices of Professor William F. Durand there have been deposited in the Library the files from the Paris office of the war-time Research Information Service organized by the National Research Council. These files give a conspectus of the scientific work on war problems carried on, especially during the last years of the war, by the four great allies, Great Britain, France, Italy and the United States. Mr. J. C. Cebrian of San Francisco has continued making the Library his debtor by welcome gifts of works of Spanish authors. Professor W. R. Eckart presented 53 volumes of works on mechanical engineering. Gifts were received also from William Kent, Professor Harris J. Ryan, Ruth St. Denis, Mrs. Ida S. Oldroyd, and others. Mrs. Lou Henry Hoover gave the sum of \$500.00 as a contribution toward the cost of binding material in the Branner Geological library.

CATALOGUE DIVISION

Helen B. Sutliff, Chief cataloguer

Number of volumes added to the shelf-list and the catalogue:

New	10,545	
Old	3	
Continuations from bindery	1,131	
Unbound continuations	1,164	
Newspapers	378	
Montessus de Ballore Seismological library—		
Bound volumes	184	
Unbound pieces	2,217	
		2,401
		15,622
Recatalogued	528	
United States documents	1,480	(titles)
British documents	374	
Unclassed theses	399	
Theses sorted and examined, but not catalogued.....	600	

Cards prepared for the catalogue:

Typed	27,440
Printed cards	19,393

46,833

Cards and slips added to the union catalogue:

Library of Congress slips.....	39,000
Harvard College Library cards.....	5,900
University of Chicago cards	7,829
British Museum slips	2,000

54,627

Owing to the unusually large influx of acquisitions and short-handedness by reason of one unfilled vacancy the Division has not been able to keep abreast with its current work.

The Montessus de Ballore Seismological library given to the University by President Emeritus J. C. Branner was turned over to the Division for classification and cataloguing. A special appropriation made it possible to employ Miss Edith Bickham who has accomplished this rather difficult undertaking. The cataloguing of this collection has presented problems that could not be estimated till the material was carefully organized. Names of authors have not been easy to identify and entries have been hard to decide upon and much bibliographical research has been necessary. The subject matter is difficult and made more so by the fact that less than ten per cent of the collection is in English. Twenty-one different languages and dialects are represented.

REFERENCE DIVISION

Alice N. Hays, Reference librarian

The year 1920-21 passed very smoothly. Beginning with September 1920 the reference division was strengthened by the arrival of Miss Lillian Hyde who has brought to us teaching experience with library training, a combination which is most helpful. Her work was arranged chiefly in the reference room. In October Mrs. Boynton was added to our forces, and her energy and ability have been appreciated in the work of the periodical room during the college year. Miss Ramsey, Miss Simonton and Miss Fearney have given us as much time as their college work would permit.

Each day seems to have been so full that there has been no time for outside work. I have therefore little to report in the line of bibliography, except the annual list of faculty publications. Spasmodically our resources and energies have been taxed to the utmost by classes in citizenship, with papers and reports, and by other large courses in economics. We have done less for the debaters than usual, because they have made fewer demands upon us.

The routine of the serial room has been somewhat increased by the regular receipt again of many of the foreign subscriptions. The records for the war period still show many gaps, especially in the case of German publications. As most of the larger American libraries are in the same position with regard to German periodicals for the years 1916-1918, a concerted effort is being made through a committee of the American Library Association to obtain the numbers needed to complete all files.

During the year 31,773 pieces of mail have been received, checked and filed. 2287 volumes have been bound at a cost of \$5436.91.

DOCUMENT DIVISION

Minna Stillman, Document librarian

The work of the division for the past year has proceeded as indicated in our last report (the first made by this division). There has been no increase in the staff, and the emphasis has been laid upon procuring current federal and state reports of interest, as issued, rather than upon building up back files except as called for by current needs. The division has received and checked 8000 United States, 3100 state and municipal, and 1050 foreign documents. These are received generally upon request or by exchange. In addition the library has purchased 100 volumes of the British parliamentary papers, between 1880 and 1895, a period for which our set was incomplete, and 150 volumes of the Calendars of the Public Record Office of Great Britain. A set of the annals of the French chamber of deputies and senate from 1861 to 1910 and semi-official "Moniteur universel" from 1800 to 1868 have also been purchased and fill a much felt need, as does a set of the journals and sessional papers of the Canadian legislative assembly and council, 1841 to 1886. With the set of Dominion journals and papers, 1867 to date, procured a couple of years ago, our Canadian collection now needs urgently only the debates previous to 1908, at which date our set begins.

Stacks are being installed in the adjoining room, used last year as a debating room, to allow for the increasing needs of the division.

Little has been accomplished towards building up the collection of Australian and South American documents, but it is hoped the next year may see this very desirable work under way.

The reference work of the division while not heavy, except for brief periods, is sufficient to keep the staff in touch with the needs of the public. Some advanced students use the room regularly every quarter for research work, and there are short periods when the larger undergraduate classes are referred to the documents for special problems. There is also a constant, though not great, demand from faculty and public for miscellaneous information and help.

LOAN DIVISION

Charles V. Park, Assistant librarian

The volume of work handled by this division during the year was by far the largest in the history of the library. The records kept at the loan desk show a circulation of 114,419 volumes—about 14,000 more than for the year preceding. These figures of course convey no adequate idea of the use of the library for the reason that many volumes are used of which it is not feasible to keep any record. No record is kept of those used in the Reserved book room which now takes care of the larger part of the syllabus reading, but as the room is filled to capacity much of the time probably as many are used there as are called for at the Loan desk. There is also a larger unrecorded use of books in the Seminar library, and in the Reference and Document divisions.

The increased use of the library is due in part to the increased enrolment in the university, in part to the four-quarter system, and finally to the better facilities and improved accommodation afforded by the new building.

LANE MEDICAL LIBRARY

Louise Ophüls, Medical librarian

The Lane Medical Library has been unusually fortunate in the donations which have come to it during the year. Mrs. Hoisholt presented the library of the late Doctor Hoisholt containing files of Danish and German medical periodicals and many Scandinavian monographs mostly on nervous and mental diseases. Some of Doctor Hoisholt's friends are collecting a fund for the purpose of keeping the psychiatric literature up to date.

From Doctor Beasley's estate were received many of his books and periodicals. Doctor G. P. Reynolds of Oakland presented all his medical books and periodicals in grateful memory of his admiration and friendship for Doctor Lane. Doctor A. W. Hewlett presented a set of Nothnagel's Practice of medicine, comprising 39 volumes. The Library is also indebted to Dr. V. B. Appleton, Dr. George T. Brady, Dr. William Ophüls, Dr. R. L. Rigdon, Dr. Emmet Rixford, Dr. George B. Somers, Dr. Stanley Stillman, President Ray Lyman Wilbur and others for welcome gifts.

Through the courtesy of their respective librarians, Mr. Clark was enabled to select from the duplicate collections of the Royal Society of Medicine, London, McGill University Medical School and the New York Academy of Medicine, journals and other serial publications which have aided materially in completing our files.

Of noteworthy importance is the start which has been made on a collection of material on the history of medicine through the generous interest and efforts of Dr. Adolph Barkan. The sum of \$4500.00 has been set aside from the L. C. Lane funds and to this Dr. Barkan has added \$3000.00 to establish a fund for the purchase of books in this field. During his recent travels in Italy and Germany Dr. Barkan made a number of small purchases and then finally secured the library of Dr. Ernst Seidel comprising about 4500 volumes and representing the work of a lifetime in bringing together the fundamental material necessary to the study of the history of medicine. The collection is rich in material on Oriental medicine, primarily Arabic. "Equal in value is that portion of the library containing the ancient medical authors of the Occident. The works of the famous physicians of the 15th and 16th centuries are represented partly in very rare original editions, the Greek and Roman classics of medicine are to be found without exception, and the whole library is rounded out by those publications of earlier and more recent date which are necessary for the study of the history of medicine."

Aside from the Seidel collection 3024 volumes have been added to the library making the total 51,211. Thirty-two periodicals sets were completed and twelve new journals added to our subscription list.

Another tier (the fourth) has been added to the stacks, thus providing space for much needed expansion.

LIBRARY STAFF

Mr. Clark returned from sabbatical leave in January. In addition to the purchases made abroad already mentioned desirable acquisitions were made from the duplicate collections of the Library of Congress, the New York Public Library, the American Antiquarian Society and Harvard College Library. Although such was not the prime object of his tour, a number of libraries were visited, among them the Imperial Library of Japan, Tokio, Imperial University Library, Tokio, Keio University Library, Tokio, George E. Morrison Library, Tokio, Imperial University Library, Kyoto, University of Bombay Library, Biblioteca Laurenziana, Florence, Bibliothèque Nationale, Paris, British Museum, London, Cambridge University Library, and the Bodleian Library, Oxford. The librarian's absence naturally imposed a large measure of responsibility upon the assistant librarian who acted in his stead and upon all heads of divisions and to them all grateful acknowledgment is hereby made.

Miss Ophüls attended the meeting of the Medical Library Association at Boston in June.

Miss Hays was absent on leave during the summer quarter to be in attendance at Columbia University summer school.

Miss Sutliff and Mr. Clark represented the Stanford Library at the annual meeting of the California Library Association at Tahoe Tavern and participated in the program.

The library staff comprised George Thomas Clark, librarian; Charles V. Park, assistant librarian; Helen Binnering Sutliff, head of catalogue division; Alice Newman Hays, reference librarian; Elizabeth Hadden, head of order division; Minna Stillman, document librarian; Louise Ophüls, medical librarian; Gilbert H. Jertberg, law librarian; Nina Almond, cataloguer; Edith Bickham, cataloguer, Seismological Collection; Edith Boynton, assistant, serial division; Edith Cook, assistant, order division; Florence M. Craig, cataloguer; Ruth Crandall, assistant, loan desk; Ruth Cary Crutcher, secretary, January to August; Johanna Dresel, assistant, Lane Medical Library; Helen Avery Gale, serial division; Lillian Hyde, assistant, reference division; Eleanor Marx, secretary, September to December; Edith Meers, assistant, serial division; William Owens, assistant, loan desk; Margaret Potter, cataloguer; Pearl Secker, cataloguer; Grace Elizabeth Stillson, cataloguer; Hannah Lilian Todd, bindery assistant; Florence L. Wickes, cataloguer, Lane Medical Library; Hallie Wilson, cataloguer, Lane Medical Library.

GEORGE THOMAS CLARK,
Librarian.

DEAN OF MEN

MEN'S COUNCIL

It seems appropriate at the beginning of this report to refer in an appreciative fashion to the very efficient and conscientious work performed by the Men's Student Council in dealing with cases involving student conduct.

If in the future men of the same high type can be kept on the Council the University may view with some degree of satisfaction the matter of student self government.

Following is a summary of the cases handled by the Council:

Charge	No. cases	Sentence
Stealing	2	1 expelled 1 case dismissed
Selling liquor	3	All expelled
Buying liquor	1	15 hours added to graduation requirements
Drunkenness	7	4 had hours added 1 expelled, sentence suspended 2 cases dismissed
Cheating	12	1 expelled 2 suspended 3 hours added 6 cases dismissed
Fighting	1	Pay expenses of injury
Scalping tickets	3	1 suspended for autumn quarter 2 suspended for 1 week All denied privilege of attending any future Big Game and placed on probation as to conduct till end of spring quarter
Fraternity giving off-campus social affair without permission.....	1	No social functions autumn quarter, 1921-22
Public initiation (M. E. Society).....	1	Case dismissed
*Tubbing	2	Hours added to graduation requirements
Miscellaneous	2	Cases dismissed
Number of students expelled		5
Number of students suspended.....		2
Number of students placed on probation as to conduct.....		1
Number of students having hours added to graduation requirements.....		10
Number of students expelled, sentence suspended.....		1
Number of students suspended, placed on probation and denied privilege of attending any future Big Game.....		3
Number of students pay expenses of injury.....		1
Number of cases dismissed		12
Total number of cases considered.....		35

Correspondence from other universities and press dispatches indicate that trouble from drinking was quite prevalent at many universities during the year just closed. At Stanford the situation was on the whole exceedingly satisfactory as regards the general attitude and sentiment of a large majority of the men toward drinking. This feeling was best exemplified by the voluntary action of certain undergraduate officials in calling off the notorious "Hold-over Party" which had for years been held before the Big Game.

The spring quarter closed without any evidence of the undesirable farewell parties that have sometimes in the past marked the let-up from examinations and subsequent separations for the summer vacation.

*Cases left over from spring quarter of 1919-20.

There would be little trouble from liquor if the University authorities received the coöperation of Federal and County officers in the matter of suppressing the sale of liquor in certain well known resorts easily accessible to students.

In this connection it is only fair to state that the police authority of Palo Alto has at all times been a helpful aid in the territory over which it operates.

TUITION NOTES AND LOAN FUNDS

The following tables are a summary of the work done by this office in the matter of tuition notes and cash loans:

APPLICATIONS FOR TUITION NOTES

	1920-1921				Total
	Fall Quarter	Winter Quarter	Spring Quarter	Summer Quarter	
New applications	228	148	97	25	497
Renewals		174	249	72	488
Totals.....	228	322	346	97	993
Representing a total of \$39,720					
No. of applications by non-frat'nity students	189	268	278	75	
No. of applications by fraternity students....	39	54	68	22	
No. of applications by first year men.....	11	43	56	10	
No. of applications by second year men.....	42	65	68	7	
No. of applications by third year men.....	62	88	97	20	
No. of applications by fourth year men	84	103	110	41	
No. of applications by graduate men.....	29	23	15	19	

CASH LOANS

Fund	1920-21	
	No. of loans	Amount
William Burton Barber Fund.....	42	\$2,615.00
Horace Davis Fund	2	240.00
Dean of Men's Fund.....	11	528.00
Totals.....	54	\$3,383.00

All applications for renewals of tuition loans made prior to October, 1920, as well as all new applicants, not only filled out printed forms, giving desired data, but were personally interviewed at some length.

As an estimate it seems safe to say that not more than 3% of the applicants are refused loans. These men as a rule are divided into three groups: those who have funds but who would rather borrow than use money already at hand; men who receive sufficient money from home or other sources to provide for the ordinary needs of a student; those who are spending more than they should because they live "easy" and object to any effort at self-support.

It is the general practice of this office not to approve applications for notes during the first quarter in residence at the University. It seems a sound policy to require that a man have enough for one quarter, both as a protection to himself and the University.

Cash loans, which formerly were recommended by the Scholarship Committee, are now at the request of that Committee carried up to the President through this office, the only limitation imposed by the Committee being that the applicant in addition to his needs must have an average scholarship of at least C grade.

The Dean of Men's Loan Fund is an emergency fund which is administered in this office upon the approval of the President.

SOCIAL ACTIVITIES

There is a general feeling among the more thoughtful undergraduates that the financial burden connected with campus dances is becoming both absurd and oppressive.

Social intercourse as well as mental and physical diversion, which should primarily constitute the justification for dances, are submerged and lost sight of in lavish and ostentatious displays of senseless expenditure. This office has reason to know something about the financial burden under which many men are placed in order to "uphold their end" in giving these entertainments.

The figures given below are an estimate of the cost of various campus dances. They were furnished by a student who has had much experience in handling the financial end of dances:

Expenses	Informal Dances (12 o'clock)		Formal Dances (1 o'clock)
Music (4 pieces @ \$9.00).....	\$36.00	(7 @ \$12).....	*\$84.00
Refreshments (80 plates @ 25c).....	20.00	(100 @ 70c).....	70.00
Punch (2 gal. @ \$2.50).....	5.00	(4 gal. @ \$2.50).....	10.00
Candy for chaperons (2 boxes @ \$1.50).....	3.00	(3 boxes).....	5.00
Taxi (3 @ 50c).....	1.50	(3 @ 50c).....	1.50
Decorations.....	20.00		75.00
Favors.....		(120 @ \$2.00).....	240.00
Waiters and catering (6 waiters @ \$1.75).....	10.00	(10 waitresses, 1 caterer).....	50.00
Programs (80 @ 25c).....	20.00	(120 @ 85c).....	100.00
Miscellaneous.....	5.00		15.00
	<hr/>		<hr/>
	\$120.50		\$650.50
Food for "Roughs".....	10.00		25.00
Informal 1 o'clock.....	20.00		
	<hr/>		<hr/>
	\$150.50		\$675.50

The above estimates are conservative, according to the testimony of men from several groups who have examined them. The expense of various items in several formal dances was greatly in excess of the amounts set out above. One group, for example, spent approximately \$500.00 for decorations alone; another gave silver favors to women as well as their escorts; these cost in the neighborhood of four dollars apiece.

Taking these estimates, the following figures represent in a general way the total amount spent by students for campus dances exclusive of the summer quarter:

* San Francisco Orchestra.

12 formals @ \$675.50	\$1,351.00
15 informals (1 o'clock) @ \$150.50.....	2,257.50
62 informals (12 o'clock) @ \$120.50.....	7,471.00
14 dormitory dances—estimated 100 couples @ \$2.50 = \$250.00.....	2,500.00
4 class and one military dance—estimated 100 couples @ \$5.00 = \$500.00....	2,500.00
21 various organizations—estimated 75 couples @ \$2.50 = \$187.50.....	3,937.50
5 plays and dance afterward @ \$20.00	100.00
Total.....	\$20,117.00

In addition to these campus dances there is a well patronized once a week dance in Palo Alto.

This office is of the opinion that \$25,000 for three quarters would more nearly cover the amount spent on dancing.

The whole total could probably be cut almost in half and yield just as much of a return in any benefits derived.

The fact that at one dance the "Roughs" or outside hangers-on were each handed a box containing $\frac{1}{2}$ pint of ice cream, 2 sandwiches, a bag of candy and a spoon, shows to what an extreme the thing can be carried.

It is suggested here that there be fixed a maximum cost to be allowed per dance, this amount to be worked out by a committee from the various living groups. Such a regulation ought to do away largely with the so-called expensive formal dances.

GAMBLING

In the estimation of this office gambling and especially poker playing is the cause of more college failures than any other influence.

It was especially noticeable among a small group at Encina during the summer quarter and was the contributing cause of one student's dismissal for a confessed theft.

There is reason to believe that the men of the University will see to it that certain undesirable individuals and practices in connection with this activity will receive proper attention during the fall quarter.

AUTOMOBILES

From conversations with upper classmen and discussions with various groups it seems quite probable that a regulation restricting the campus driving or ownership of automobiles to upper classmen would meet with the approval of University leaders.

It appears that a regulation of this nature is in force at one of the large Eastern Universities.

There is little argument among thoughtful people concerning the desirability of such a regulation.

FRATERNITIES

With the exception of two chapters there has been no occasion for anything more drastic than informal talks with the various fraternities. The two exceptions above mentioned have been freed from some of their more troublesome members and give promise of being strong and helpful organizations when their younger men finally get control of the chapters.

The Inter-fraternity Conference is a live and helpful organization, made up in large part of serious minded men.

This office has long been of the opinion that there should be a centralized accounting and purchasing office handling financial matters in connection with the fraternities, an opinion that has been strengthened by numerous communications received from various firms and tradespeople having accounts against fraternities. House managers are rarely elected because of any particular qualifications for the position. Few if any of them have had experience or training fitting them for the duties they are to perform. Some managers may be highly efficient, but they are an exception and probably none of them could in any way compare with a well planned and long tried system under the direction of a trained business man employed by the fraternities as a group.

Supervision and control would result in better living and less internal and external friction, to say nothing of a probable reduction in expenses.

ROUGH'S DAY

The annual Roughs' Day, ordinarily a good natured and harmless mixture of old clothes and young spirits, contained several objectionable features in its last celebration. Unless some responsible upper class committee can see to it that suggestive female impersonations are eliminated, it would undoubtedly be well to discontinue Roughs' Day.

SOPHOMORE-FRESHMAN BASEBALL RUSH

The annual Sophomore-Freshman Baseball rush, an event that has for many years been marked by a most unsatisfactory and utterly useless display of ill feeling among two groups of Stanford men, was called off last spring after a disgraceful preliminary encounter between members of the two classes.

It appears to this office that this rush has not in the past and never can in the future serve any good purpose. Stanford, with its comparatively small student body, needs cohesion and good fellowship among its students. After the initial Sophomore-Freshman rush any activity is not wholesome that tends to draw classes apart into groups fighting against each other.

The capture of individual men, as well as smaller groups, and afterward taking them to distant outlying regions, is attended by many dangerous evils.

It is recommended that this affair be done away with permanently.

CARNIVAL

As a means for raising funds for athletic teams the Carnival was a great success; in several other important respects it was worse than a failure.

If maintained as a Stanford institution it should be in charge of a small committee. This committee should be given to understand that it is to be held as strictly accountable for the general tone and character of the Carnival as is the editor of any campus publication. The plea that outsiders are responsible for objectionable features is no answer. The Carnival can be maintained as an enjoyable institution if the students care to look after it. If they do not, it should cease to exist.

UNDERGRADUATE PUBLICATIONS

The clean tone of undergraduate publications is the cause for much favorable comment from officials of other institutions. This is especially true as regards the Chaparral, which to quote from an Eastern correspondent, has escaped the taint of sex smut that is so evident in many college weeklies.

If the business management of our publications were on the same level as their editorial and other matter, the situation would leave little to be desired.

CHECKS

There is present among our students a surprising degree of carelessness or ignorance as regards the responsibility of one who writes checks. It very frequently occurs that there is present in such transactions an element other than carelessness or ignorance.

During the year this office collected approximately \$600.00 due to "irregularity" in relation to checks drawn by students.

In addition to the foregoing subjects this office has been actively concerned with such matters as the men's dormitories; the Men's Union; work on the Scholarship Committee; interviewing students as a member of the Vocational Committee; the examination and approval or disapproval of all petitions from men students relating to leaves of absence and remission of penalty fines; the handling of a rather large and varied correspondence; visits to hospitals; conferences with various groups and individuals.

The office has been a clearing house for the troubles and perplexities as well as many of the more cheerful things that come into the lives of our Stanford men.

This report should not close without a note of appreciation for the work of Miss Lucile Townley, Secretary to the Dean of Men. Her patience, tact and fine spirit, coupled with her other secretarial attainments, have been strong and helpful factors in the work of the office.

GEORGE BLISS CULVER,
Dean of Men.

DEAN OF WOMEN

In addition to her former usual duties the Dean of Women has been privileged during the past year to work with the Committee on Lower Division Administration and to sit as a member, and during the summer quarter as acting chairman, of the Scholarship Committee. These two new duties indicate the addition of an important function to the office of the Dean of Women,—that of the academic advising of women students and direct connection with their academic records, a function toward which the office has been tending during the past five years of expansion. The office of the Dean of Women has thus reached the point where in the minds of women students it stands as the interpreter to them of University methods, demands, policies and ideals, not only administrative but also

academic. At this time therefore the Dean of Women feels justified in pointing out the curious anomaly that, while she performs functions that demand accurate information and constant touch with University policies, their changes and additions, she is cut off from hearing the deliberations of the faculty engaged in moulding or changing policies, since she is not a member of the Academic Council. The retiring Dean of Women therefore urgently recommends that the office be now recognized along with that of the Registrar and of the Librarian as worthy of a place on the Academic Council and in the Articles of Organization of the Faculty of Stanford University. (Note. The only mention of the Dean of Women in the Trustees' Manual is in connection with the conduct of students in Roble Hall.)

Residence Halls and Housing: The beginning made upon the policy of housing all Stanford women students in residence halls owned and operated by the University is now firmly established and should be carried to completion while the reasons for it are fresh in the minds of student body and alumnae.

There is immediate and pressing need for the better housing of graduate students who during the summer quarter 1920-21 resided as follows:

Roble Hall	12
Madroño Hall	16
Campus homes	16
Palo Alto—	
Boarding	6
Living at home.....	7
Commuting	10

Except for seventeen residing at home in Palo Alto or in other neighboring towns, fifty graduate women sought places to board. The number of applications for Roble Hall from undergraduates makes it impossible for this office to accept graduate applications except in case of residents of the Hall who graduate and return immediately or with only a summer intervening. Other graduates, many of them new to Stanford, have to live two in a room on the third floor at Madroño Hall (bathroom facilities on the second floor), or in isolated rooms in Palo Alto where board is obtainable only at cafeterias or restaurants. Furthermore, as indicated in last year's report, all these accommodations are considerably more expensive and less convenient than those at Roble so that graduate students, whom the University really encourages and wants here, are beginning to feel that they are discriminated against, and in several instances have advised their friends to go elsewhere. Even the holders of University Fellowships and Scholarships (graduate) cannot be comfortably accommodated. The Dean of Women would advise that as soon as possible another unit of the general housing scheme now in the architect's hands be constructed, to adjoin wing C of Roble Hall and thereby make possible its disconnection from Roble; that in this building graduate students be accommodated; but that later, when the whole scheme of halls is in operation, graduate students be either distributed among all the halls or be housed in the end unit farthest removed from what will become the center of undergraduate activity among the women students.

Grounds: The Dean of Women has watched with interest the gradual development of the grounds in the women's area. The work of planting does not seem to progress as rapidly as advisable, however. It is recommended that shrubs be banked against the base of Roble Hall; that some flowers be planted suitable for cutting (such as those kept growing at the Library); that rapidly growing shade trees be planted along the avenue to the Hall, until such time as the oaks shall attain a fair size; that half-grown oaks be moved into the area in front of Roble Hall, as originally planned; and that as the grounds develop, garden paths and benches be placed in this area to make it a real outdoor gathering place for the women of the University.

Interior: The comfort and the general spirit in Roble Hall can be greatly increased if, when the construction of a new building relieves the pressure for rooms, the central suite on the second floor of each wing be remodeled into a sitting room for the residents of the wing. Such auxiliary sitting rooms should be provided for in the new units. It seems to the Dean of Women that the number of sitting rooms should be increased and the result noted before any attempt is made to make Roble Hall smaller, by remodeling along the lines suggested in last year's report. It is possible that sitting rooms, in Roble and the new units, accommodating only 60-75 girls, will solve the problem now presented by the size of Roble Hall, but under no condition should so large a hall for women students be contemplated in future. Experience here and elsewhere shows it to be probable that halls housing 60-75 students will prove to be the most satisfactory size.

Admission of Students: The Dean of Women notes with interest the marked improvement in the method of admission of students by the gradual elimination of the numbered list. She would, however, call attention to the fact that Stanford has placed herself in an unusual position among American institutions in removing from the competition for entrance sons and daughters of alumni, thus yielding special privileges to ties of blood and tending toward developing at Stanford an hereditary student body in the relatively near future. If such policy pleases Stanford alumni and gains their support, it certainly cannot be expected to gain the support of the general public interested in education, and in time may make more serious problems for the University than those it was designed to solve.

Athletics: The attendance and enthusiasm at the Women's Field Day in June promise all the results anticipated from the reorganization of athletics and the acquisition of new fields. Intramural sports are now definitely established and with the graduation of students who have known varsity athletics, the last resistance to the policy is being rapidly eliminated. The wisdom of Stanford's stand on this matter is shown by recent resolutions of the Athletic Conference of American College Women favoring intramural in place of intercollegiate athletics, by the general tendency in men's athletics to develop intramural sports, and by the fact that intercollegiate athletics for women have become increasingly difficult to arrange under the quarter system, since the season for sports at Stanford often no longer corresponds to that at the University of California or at Mills.

Lower Division: Most of the women students in the Lower Division had their courses arranged and signed by the Dean of Women in October and January. The women students generally welcome the opportunity offered by the Lower Division to study in the various fundamental fields before deciding upon a major subject, and the Dean of Women finds it most helpful to have direct contact with the academic work of the individual student and to follow her through her course. Introduction to and acquaintance with the women students are thus placed on the business ground of helping them to secure at the University intellectual training through academic work. The Dean of Women considers this opportunity for academic advising the most important single achievement during the past five years, and looks to see it continued and strengthened.

Intellectual Condition of Women Students: The care in selecting the few women, who under the charter limitation can be admitted to Stanford each year, has interested the Dean of Women to see what may be expected of those who enter. After five years of observation she has offered the following for further discussion by the faculty, in the hope that the conclusion reached will mean intellectual progress for the whole body of Stanford students.

1. Academic work in the University:

(a) According to the methods in use at Stanford to measure undergraduate efficiency, the women students are up to and a good deal above standard in units registered for, units passed and points to measure excellence of grade. For example, except in special emergency cases of which there are rarely more than six in any one quarter, women must register for 13 units or more. For the autumn quarter, 1920, 388 women registered for 15 units or above; 48 registered for 13; and 62 for 14 units. (Of the 176 registered for over 15 units, 68 lived at Roble Hall, 66 at sorority houses, and 42 at home.)

(b) There are relatively few deficiencies incurred by the women students. For example, of 267 students placed on probation by the Scholarship Committee in January 1921, only 11 were women. That is, .2% of the women students incurred scholarship deficiencies.

(c) Excellence: In 1920, of 38 students elected to Phi Beta Kappa, 17 were women, and of 15 Stanford Scholars, chosen on the "Basis of special scholastic attainment", 8 were women.

2. Initial capacity for academic work:

On the new basis for admission of women students, each candidate will have to satisfy the Committee that she has special claim to consideration. When finally admitted, she will find herself in a group of young women, whose average grade of scholarship in high school has probably been no lower than 85%, and whose ability to carry at the same time other interests demanding leadership, physical vigor and often the overcoming of handicaps financial or otherwise has been attested by school teachers and principals. There should be no body of young women in California more fit to undergo strenuous undergraduate intellectual regimen. Yet it is the observation of the Dean of Women that on the whole,—zealous individuals

always excepted,—the women students are not giving any undue amount of attention to academic work, and perhaps a fifth are giving less energy and attention to it than they are to extra-curricular activities (usually to the social side rather than the business of college activities which latter is carried on by the very highest type of Stanford woman.) The Dean of Women feels that even a minority of the five hundred women is too many, among such a picked group, to allow to go through their University work with the "C average", the "get by" spirit. It is inconceivable that these selected students should in crossing the threshold of the University lose just what brought them here—exceptional ability, and above average interest in their academic work. They should be gaining at Stanford a true conception of what constitutes real intellectual effort, and what are its fruits. Until they are worked to capacity, they will not taste of all its possibilities, and the conclusion of the Dean of Women is that at Stanford the women students at least are not being worked to capacity. By this is not to be inferred that undergraduate students should be cloistered and driven. Academic institutions are humane; Stanford is particularly solicitous of the welfare of her students. She recognizes and will cherish the recuperative value of leisure. What the Dean of Women wonders is whether at the present time Stanford may, quite unconsciously, be understressing in practice, whatever she may hold in precept, the constructive value of intellectual work.

The case is very probably similar with the men students, but this report can concern itself authoritatively only with the women. The Dean of Women desires merely to state the problem. She is confident that a solution which tends to stiffen academic standards will do more than anything else to reduce the less worth while extra-curricular activities and to eliminate students who are inclined to apply their native intelligence only enough to permit them to indulge in the so-called "college life."

As a step toward such a solution the Dean of Women welcomes the recent action of the Scholarship Committee in raising the disqualification standard and placing probationed students on their own responsibility to use their time profitably toward making good their deficiencies.

An Additional Endowment for Women Students: Next to raising academic standards, that which will most wholesomely affect the whole student body will be the raising of an additional endowment to accommodate more women students on a strictly co-educational basis.

The ratio of men to women at Stanford is at present four to one, and unless the situation is changed by additional endowment the women students remain a perpetual minority, which is to the advantage neither of the men nor of the women students. The girl who may have six to eight invitations to one college function is getting an entirely erroneous impression of her importance and the amount of attention that her femininity may command in life. The man whose invitation may remain unaccepted until the eleventh hour is getting a wholly superficial idea of the modern woman. The 500 limit on women students thus creates an artificial atmosphere not to be found in the normal human society for which students are presumably being fitted. Women today are taking their place in

the active political and economic, as well as in the social structure, and college men should be learning so to regard them. Where the tradition has grown to be as it now is at Stanford, there is amused tolerance, emotional ecstasy or open warfare toward a group of young women who, regarded less as ornaments, would play a more useful part in the serious activities of college life.

Women's Self-Government: The past year's experience in student self-government among the women has been marked by a slight but obvious increase in public opinion. There has been developed, without rule or regulation, but with the advice and exhortation of the Women's Council, a better understanding of what is to be expected of Stanford women in matters of behavior and decorum. Among the notable results are a gradual relief from objectionable forms of dancing, a definite stand against smoking, and an attempt to moderate, in a few conspicuous cases, extreme methods of dress. The process of building up public opinion, even with such a start, will apparently be slow, for public opinion among the women will progress little faster than public opinion among the men students, and neither will much exceed the general level outside the University. With the level of social amusements as low as it has been everywhere in 1920-21, Stanford may congratulate herself on having maintained her usual marked freedom from moral difficulties and on the generally wholesome outlook of the majority of the women students. The minority has perhaps presented aggravated potentiality for trouble but the continual education of student opinion proves effective to balance extreme tendencies.

There is needed at Stanford some general pooling of the interests of men and women students. The Dean of Women has sometimes thought that a general college council, composed of the Men's and Women's Councils and the Faculty Student Affairs Committee, meeting perhaps once a quarter to talk over matters of general interest, would be helpful to all concerned.

Women's Student Loan Fund: During the year 1920-21, eight students received loans to enable them to continue their University work. Of these, one has already repaid in full the amount loaned her. Several former students have made repayments on loans outstanding for several years. There has been one gift of \$7.50 to the fund. Small money gifts to the University might be effectively placed in this fund which is often the meaning of tiding girls over a period of financial stress that otherwise would compel them to leave the University.

Following is the financial statement to date:

WOMEN'S STUDENT LOAN FUND
(Annual Statement from Dean of Women)

Receipts:

Balance forward September 1, 1920.....	\$252.59
Repayment of loans Sept. 1, 1920-Sept. 1, 1921.....	227.09
Interest	42.00
Gifts	7.50
Total.....	\$529.18

Disbursements:

Loaned, Sept. 1, 1920-Sept. 1, 1921.....	\$475.00
Balance forward, Sept. 1, 1921.....	\$54.18
Unpaid loans	1,448.00
Total in fund.....	\$1,492.18

(Note: The Dean of Women's books show \$9.00 in excess of amount on Comptroller's books for unpaid loans.)

General Condition of the Office: The retiring Dean of Women has greatly appreciated the cordial coöperation of the President, the administrative officers and the faculty, in developing the office as an integral part of the University administration. She hopes that the real function of the office, as thus far established, and its continuance as the interpreter to women students of the ideals and methods of the University are now assured.

HARRIET BRADFORD,
Dean of Women.

ALUMNI SECRETARY

This year for the first time the Alumni Office has functioned as a definite department of the University and the Secretary, who is also the elected representative of the Alumni Association, serves in a dual capacity as an appointed officer to interpret the University and its policies to the alumni and also an elected representative of the alumni to serve them in their relations to the University. It is to be hoped that the alumni office will become a service bureau for the University community, and for that purpose the equipment and information of the office is always available for faculty, alumni, and students, individually, or as organizations, for all legitimate purposes.

A register, presented by the Class of '13, has been placed in the office, and all alumni visiting the University are requested to enroll, and they also are invited to make the office their headquarters while on the campus. Desk space, writing materials, and stenographic assistance are available for the service of visiting alumni.

The most important task during the year has been the completion of the Alumni Directory and Ten-Year Book. This Directory contains the name and address, college year, war service record, and occupation of all graduates and non-graduates of the University. The total number of graduates to October, 1920, is 6,515. Of this number 367 are deceased and 94 others have not been located. For the first time an effort has been made to include non-graduates in the list, with the gratifying result that 12,187 out of the total 17,184 matriculates have been found and correctly placed on record. In addition to the complete alphabetical and geographical list of alumni there is included a chronology of important events in the University history, a list of former and present members of the Board of Trustees, an alphabetical list of the former and present members of the faculty, a record of all graduates by classes, and a geographical and alphabetical list of graduates of Cooper Medical College.

Particularly noteworthy has been the increased interest among the alumni throughout the country. Sixteen new clubs have been established during the year, and several clubs which have been noticeably inactive have shown an aroused interest in University affairs. In addition, alumni in various other localities have given assurance that clubs will be organized during the next few months.

The real purpose and benefit of the local clubs is, first, to promote closer fellowship between Stanford men and women; second, to establish a closer contact with the University; third, to become identified with the social and civic problems of the local community.

There has been without question a substantial and healthy increased interest and responsibility on the part of the alumni. This is clearly apparent in the attitude of the graduating classes during the last two years—nearly one hundred per cent being active members of the Association—but of far greater importance is the awakened interest of older alumni, who, looking back over their shoulders, begin to realize more fully what is the real, genuine Stanford spirit, and desire in the best way possible to express their love and devotion for the high ideals that the University represents.

Another evidence of an aroused alumni interest and activity is shown by the large increase in the circulation of the *Illustrated Review*—the monthly publication of the Alumni Association. From a circulation of less than 400 copies ten years ago, the magazine has at present nearly 4,500 subscribers, and this year Stanford ranked fourth in the percentage of graduates who are active members of their alumni association.

JOHN EZRA McDOWELL,
Alumni Secretary.

APPOINTMENT SECRETARY

TEACHING

The Stanford University Appointment Office, during the year 1920-21, received 1003 requests for teachers. A record by months follows:

September	51
October	17
November	28
December	27
January	30
February	40
March	94
April	130
May	159
June	189
July	195
August	48
Total	1,003

Of these 35 were for school executives. A classified list of these requests follows:

Assistant Superintendent	1
City Superintendent	2
District Superintendent	2
Grade Principal	12
High School Principal	11
High School Vice-Principal	7
Total.....	35

In the case of 242 of the requests for teachers it was necessary to report "no candidate", sometimes because the combinations were poor; sometimes because too many subjects were demanded; often because the subjects were of the vocational type which have recently been added to the high school curriculum and for many of which the university does not adequately prepare candidates. Quite frequently it was because a man was demanded, or a person with some particular experience or special personal qualifications. A classified list follows:

EDUCATION AND PSYCHOLOGY

Director of Mental and Pedagogical Tests and Measurements.....	1
Religious Education Teacher	1
Rural Training Teacher	1
Teacher of Ungraded Classes.....	1
Teacher of Feeble-Minded Children.....	15

EXECUTIVE

Dean of Women	2
President of Agricultural College.....	1
Principal	1
Principal (also teach Latin and Mathematics).....	1
Principal of Normal Training School.....	3
Vice-Principal (also teach Man'l Tr., Auto Repair and Mech. Draw.).....	1
Vice-Principal (also teach Math., Biology or General Science).....	1

HISTORY AND ECONOMICS

History only	1
History and Economics	2
History (with one other subject).....	1
History, English, Typing, Bookkeeping, and Manual Training.....	1
History and Physical Education for Women.....	1

LANGUAGES

English only	2
English—Normal School—also act as head of department.....	1
English, Public Speaking, etc. (Normal School—act as head of dept.).....	1
English and Spanish	4
English and Typing	1
English and one other subject.....	1
French, Spanish and Latin.....	1
French (Manager of French House).....	1
German, French and Spanish.....	1
Latin, Cooking and Physical Education.....	1
Romance Languages	1
Spanish only	1
Spanish, Latin and English.....	1
Spanish and Chemistry	1
Spanish and Physical Education for Women.....	1
Spanish and Manual Training	2
Spanish with Mathematics or English.....	1

Spanish, English and Physical Education.....	2
Spanish and Commercial.....	1
Spanish and French	1

MATHEMATICS

Mathematics only	10
Mathematics and some other subject.....	1
Mathematics, Freehand Drawing, Physical Education and Spelling.....	1
Mathematics and Science	4
Mathematics, Physical Education and Mechanical Drawing.....	1
Mathematics, Latin and History.....	1
Mathematics and Manual Training.....	1
Mathematics, English, History and Physical Education for Women.....	1
Mathematics, Commercial Law, Bookkeeping.....	1
Mathematics, Commercial Subjects and Penmanship.....	1

MEDICAL

Associate Professor—Ear, Nose and Throat	1
Associate Professor—Pharmacology	1
Associate Professor—Ophthalmology	1
Associate Professor—Pediatrics	1
Associate Professor—Otolaryngology	1
Associate Professor—Dermatology	1
Assistant Professor—Pharmacology	1
Instructor in Practical Nursing	1
Oral Surgeon	1

MUSIC AND ART

Art	2
Art (Head of Department—Normal School).....	1
Bandmaster	1
Drawing and Applied Art.....	1
Music only	4
Music and Drawing.....	1
Music and Physical Education for Women.....	1
Music, Art and English.....	1
Supervisor of Music	1
Supervisor of Music and Drawing.....	2
Supervisor of Music and also teach Latin with History or English.....	1

PHYSICAL EDUCATION

Men

Assistant in Physical Education.....	1
Athletic Coach	1
Athletic Coach who can teach Freehand Drawing and Typing.....	1
Athletic Coach who can teach English, History and Mathematics.....	1
Physical Education Director—Normal School—Head of Department.....	1
Physical Education only	12
Physical Education and take charge of study hall.....	1
Physical Education and English.....	1
Physical Training, Athletics, Ancient and Modern History.....	1
Physical Training in Grades.....	1
Playground Supervisor	1
Supervisor, Physical Educa. for Men (act as Attendance Officer also).....	1

Women

Physical Education only.....	3
Physical Education, Penmanship, English, Music or Art.....	1
Physical Education and Drawing.....	1
Physical Education with some other subject.....	1

Physical Education and Music.....	1
Physical Education and English.....	1
Physical Education and Corrective work.....	1
Physical Training, Algebra, Plane Geometry.....	1

SCIENCE

Biology only	1
Botany only	1
Chemistry only	1
Chemistry, Cooking and General Science.....	1
General Science, Chemistry, Biology.....	3
General Science, Biology, Chemistry, Athletics for Men.....	2
General Science only	1
General Science, Mathematics and Athletics for Men.....	2
Science—any	3
Physics only	3
Zoology	1

VOCATIONAL

Agriculture (also act as head of department).....	1
Agriculture—Part-time work	1
Animal Industry	1
Architectural Drawing	3
Auto Mechanics and Transportation.....	1
Bookkeeping and Physical Training.....	1
Bookkeeping and Commercial Law.....	1
Bookkeeping, Mathematics, General Science and Biology.....	1
Commercial Subjects (all)	7
Commercial Subjects and Languages.....	1
Commercial Subjects and Music.....	1
Commerce, Bookkeeping and Arithmetic.....	1
Domestic Art, Mathematics and Physical Education for Women.....	1
Domestic Science and Art and Freehand Drawing.....	1
Domestic Science and Art.....	2
Domestic Science and Physical Education for Women.....	1
Domestic Science, General Science or Physics.....	1
Electricity	1
Engineering (Universities)	4
Home Economics	2
Home Economics—Normal School (also act as head of department).....	1
Household Arts	1
Manual Training only	4
Manual Training and Agriculture.....	1
Manual Training and Athletics for Men.....	1
Manual Training and Freehand and Mechanical Drawing.....	1
Manual Training, Science, Mathematics or History.....	1
Mechanical Drawing and Athletics for Men.....	1
Mechanical Drawing, Auto Mechanics and Manual Arts.....	1
Mechanics	1
Shop Mathematics and Mechanical Drawing.....	1
Shop Work only	1
Vocational Science, Vocational English and Vocational Mathematics.....	1
Vocational Woodwork, Forge, and Shop Work.....	1
Woodwork and Mechanical Drawing.....	1
Woodwork, Physical Education for Men, and Mechanical Drawing.....	1

GENERAL

Critic Teachers	13
Grade Teachers	11
Kindergarten Teachers	3

Library Assistant (School Library).....	1
Rural Grade Supervisor	2

SUMMARY OF REQUESTS FOR TEACHERS FOR WHICH WE HAD NO
CANDIDATES

Education and Psychology.....	19
Executive	10
History and Economics.....	6
Languages	26
Mathematics	22
Medical	9
Music and Art.....	16
Physical Education (Men 23, Women 10).....	33
Science	19
Vocational	52
General	30
<hr/> Total.....	<hr/> 242

Of the remaining 761 requests for teachers the Appointment Office filled 198 positions, or 26 per cent. An even larger percentage of the positions could have been filled had the candidates not restricted so greatly the locations which they would consider.

During the year 46 men and 81 women registered with the Appointment Office for the first time, and 70 men and 91 women renewed their registration, making a total of 288 candidates for teaching positions. Many of the re-registrants who had not resigned their positions were interested only in very limited fields and locations. Probably half of them had no real expectation of moving. One interesting fact to be noted is that there were 15 fewer men registered for this type of work this year than last, and that the total registration of men this year was 116 compared with 135 the previous year.

NON-TEACHING

During the first half of the past fiscal year the number of requests for candidates capable of filling clerical, business, legal, engineering and other technical positions, compared very favorably with the number of requests received the previous year. Early in 1921, however, a decided change was noted. Some important firms failed; others discharged a large number of men; still others closed down for an indefinite period. The immediate effect was that many experienced engineers and chemists were relieved from duty and that inexperienced men began to find it exceedingly difficult to find any kind of technical employment. Naturally, also, this condition made it difficult for young men interested in business and in law to find suitable work. Reports from the eastern part of the United States indicate that conditions there were far worse than they have been on this coast.

The following classified list indicates the number of requests the office received during the year for candidates capable of filling positions other than teaching. Some of the requests are listed as "general". This means that the employer asked for as many men as the office could supply:

Kind of Work	No. of times no candidates		General Calls
	Calls	available	
Advertising	1		1
Agriculture	3		0
Americanization Work	1		0
Banking	3		0
Bond Salesman	13		1
Bookkeeper	4		0
Business	1		0
Business (Branch Manager)	1		0
Cataloguer	1		1
Chemist	7		0
Chief Chemist	1		0
Chemical Engineer	1		0
City Engineer	2		0
Civil Engineer	3		0
Clerical	2		0
Demonstrating	1		0
Dietitian	2		0
Director—Girls' Division, Community Center	1	1	0
Drafting	18	2	0
Electrical Engineers	4	1	0
Engineers and Economics Men	0		1
Employment Work (Men)	0		1
Foreman (Night) Steel Company	1	1	0
Foreman (Shop) Steel Company	1		0
Foreman—Steel Company	1	1	0
Foreman (Yard) Steel Company	1		0
Geologist	1	1	0
Horticulturist	1		0
Inspector—Steel Company	1	1	0
Investigator (Efficiency)	1		0
Laboratory Technician	4		0
Laboratory Tester	1		0
Law Clerk	1		0
Librarian—Assistant	2	1	0
Library Work	0		1
Life Insurance	0		1
Mechanical Engineers	3		4
Mining—Concentrating Mill	1		0
Mining Engineers (Chile)	0		1
Newspaper Correspondent	1		0
Newspaper Reporter	1		0
Radio Work	3		0
Real Estate	1		0
Repeater—Telephone Company	0		1
Research Work	3	1	1
Salesman	7		2
School Secretary	2		0
Secretary	26		0
Service Station Work	4		0
Social Service	1		1
Solicitors	0	1	6
Statistician	2	1	0
Surveying	1	1	0
Telephone Engineer	1		0
Traveling Companion	1		0
Totals	144	13	23

A record of the non-teaching placements for the year 1920-21 as compared with the placements for 1919-20 follows:

PLACEMENTS NON-TEACHING			
1920-21		1919-20	
Business	13	Business	17
Technical	13	Technical	12
Miscellaneous	6	Miscellaneous	10
Scientific	4	Scientific	4
Secretarial	12	Secretarial	11
		Social Service	2
Total.....		Total.....	
48		56	

A record of the number of candidates who registered for non-teaching or for technical positions follows:

REGISTRANTS FOR NON-TEACHING POSITIONS

<i>New Registrants—</i>	
Men	81
Women	35
<i>Re-Registrants—</i>	
Men	36
Women	23
Total.....	
175	

REGISTRANTS FOR TECHNICAL POSITIONS

<i>New Registrants—</i>	
Men	51
Women	4
<i>Re-Registrants—</i>	
Men	15
Women	2
Total.....	
72	

STUDENT EMPLOYMENT

During the year 1920-21 664 men and 116 women, or a total of 780 students, registered with the Appointment Office for part-time work which would enable them to earn some or all of their expenses while attending the university. Most of these students were given assistance. During the same period the office received 1696 requests for student help, as compared with 497 requests the previous year; 657 of these requests were for students who would be permanent during the college year; 1039 were for strictly temporary work. A classified record follows:

Kind of Work	Permanent			Temporary			Total
	Palo Alto	Campus	Outside	Palo Alto	Campus	Outside	
Agent	7	12	0	0	1	0	20
Athletic Coach	5	0	2	1	0	0	8
Boys' Club Leader	0	0	0	1	0	0	1
Canvassing	7	1	0	1	1	0	10
Care of Children	9	4	0	14	5	0	32
Carpenter Work	7	0	0	16	6	9	38
Chaperon	0	0	0	0	7	1	8
Chauffeur	3	0	0	0	1	0	4
Clerical	7	3	1	3	41	0	55
Clerking	4	0	2	1	0	0	7
Collector	3	0	0	1	0	0	4
Companion	0	0	3	3	0	1	7
Computing	5	0	0	0	0	0	5
Cooking for R & Bd	12	14	0	0	1	0	27
Cooking for Cash	8	5	0	0	0	0	13
Cooking for Meals	3	0	0	0	0	0	3
Dishwashing	6	10	1	5	17	0	39
Drafting	2	1	0	2	4	3	12
Drug Clerk	0	0	1	0	0	0	1
Electrician	0	0	0	0	2	0	2
Gardening	9	36	17	142	19	1	224
Garage	2	0	0	3	0	0	5
Housew'k for Cash	13	4	2	90	44	9	162
Housew'k for Meals	0	2	0	0	0	0	2
Housew'k for Room	3	2	1	0	0	0	6
Housew'k for R & B	25	7	6	2	1	0	41
Housew'k, R, B & C	21	5	7	0	0	1	34
Janitor	13	2	2	0	0	0	17
Lab. Technician	0	2	0	0	0	0	2
Lecturer	0	0	0	0	0	2	2
Lettering	0	1	0	1	0	0	2
Manual Labor	9	1	2	125	87	46	270
Miscellaneous	19	12	1	11	10	0	53
Model	0	2	0	3	0	0	5
Musician	2	0	1	12	0	5	20
Newspaper work	4	2	0	2	3	0	11
Painter	0	0	0	20	0	0	20
Pruning fruit trees	0	0	0	2	0	2	4
Selling	79	5	2	0	1	0	87
Sewing	0	0	0	7	0	0	7
Shoe Clerk	2	0	1	0	0	0	3
Soliciting	5	11	2	3	0	0	21
Statistical work	0	3	0	0	0	0	3
Stenography	6	15	3	11	25	0	60
Substitute teacher	0	0	0	1	0	5	6
Teaching part time	7	0	8	1	0	0	16
Translator	0	0	0	3	2	0	5
Tutor	5	5	5	13	12	4	44
Typing	1	1	0	3	63	0	68
Waiter, Rm, B & C'h	3	3	10	0	0	0	16
Waiter, Rm & Bd	6	0	0	0	0	0	6
Waiter, Cash	2	1	10	9	15	0	37
Waiter, Meals	44	12	0	27	40	0	123
Watchman	2	0	0	2	1	0	5
Women, Rm & Bd	13	0	0	0	0	0	13
Totals	383	184	90	541	409	89	1,096

For 83 of these 1696 part-time positions the office had to report "no candidate"; 1148 of the positions were filled. A low estimate of the amount earned by the students during the year in this kind of employment has been made. The total amounts to \$83,364.10.

FULL-TIME TEMPORARY WORK

During the year 1920-21 499 men and 102 women registered for work during some or all four vacation periods—Thanksgiving, Christmas, Easter and the summer vacation. A classified record of requests for men follows:

	Calls	Placements
Agent	1	1
Bookkeeper	1	1
Boys' Camp Director	1	1
Canvassing	5	1
Cooking	3	3
Cost Surveying	6	6
Dishwashing	1	1
Drafting	2	2
Gardening	1	1
Housework	1	1
Life Saver	10	0
Lumbering	4	0
Manual	48	48
Muckers (Mines)	3	2
Oil Fields	15	4
Selling	47	33
Soliciting	40	12
Statistical	1	1
Summer Resort Work	12	6
Tutoring	5	5
Waiters	5	5
Watchmen	2	2
Totals.....	214	136

In addition to these specific requests for men listed above we received general calls for salesmen and solicitors from 17 firms. A classified record of the requests for women and the number of placements follows:

	Calls	Placements
Art Work	10	4
Bookkeeping	2	2
Care of Children	3	3
Clerical	1	0
Cooking	1	1
Housework	3	3
Housemother	1	1
Housekeeper	1	1
School Nurse	1	0
Social Service	1	1
Soliciting	12	0
Stenographer	7	6
Stenography and Bookkeeping.....	1	0
Summer Resort Work.....	14	12
Telephone Operator	3	1
Tutoring	3	3
Typing	3	3
Totals.....	69	41

SUMMARY OF FULL-TIME TEMPORARY CALLS AND PLACEMENTS

	Calls	Placements	No Candidates
Men	214	136	78
Women	68	41	27

One very interesting fact in connection with student employment and full-time temporary employment is that the majority of the men and women who are earning their expenses at Stanford work during the term as well as during the vacation periods. Only 185 men and 48 women, or a total of 233 students, asked just for vacation work.

GENERAL REPORT

During the year the Appointment Secretary attended the State Teacher Training Conference held in Oakland, California, and the State High School Principals' Convention held at San Rafael. After a vacation trip spent in the eastern part of the United States and Canada during the summer the Appointment Secretary visited the appointment offices of numerous colleges and universities for the purpose of obtaining valuable suggestions for the work at Stanford University. Her visits to the Women's Educational and Industrial Union in Boston and to the Bureau of Vocational Information in New York ought also to be mentioned in this connection as their work is closely allied to that of the university appointment offices.

On behalf of the candidates registered in the office for business and technical positions, many eastern business firms, banks, manufacturing plants, etc., were visited. Of the utmost importance were the interviews held in New York City with the officers of many of the National Social Welfare Organizations and in Washington, D. C., with officials of the Children's Bureau, the Women's Bureau, the Veterans' Bureau, and the National Red Cross. Two things this eastern trip has made clearly evident: First, that there is a great need of developing a strong central bureau for vocational information for highly trained men and women—a bureau with enough funds to enable it to maintain branches in all of the principal sections of the United States to furnish to all coöperating Appointment Secretaries the results of the vocational researches it should be constantly conducting; second, that there is great need of a better organization of Appointment Secretaries.

To aid in helping students find employment an anonymous gift of a thousand dollar Liberty Bond has been received by the Appointment Office. This gift is most welcome. It is to be hoped that before many years the Appointment Office will be heavily endowed by alumni and by others interested in helping worthy students help themselves.

RECAPITULATION

The daily records kept by the Appointment Office during the year have resulted in the following interesting data:

	1920-21	1919-20
Total number of Teaching Registrants.....	288	324
Total number of Non-Teaching Registrants	247	296
Total number of Part-time Registrants.....	780	249
Total number of Full-time Temporary Registrants	601	179
Total number of Non-Stanford Registrants	85	36

Grand Total of Registrants for the year..... 2,001 1,084
 (Note: The Non-Stanford Registrants were Palo Alto residents who registered for work in this vicinity.)

Month	Visitors	Letters	Recommendation Blanks Mailed	Sets of Recommendations Sent Out
September	601	475	1,060	Owing to change of billing system a record of recommendations sent out is not avail- able this year
October	803	362	198	
November	571	466	248	
December	679	923	466	
January	917	515	377	
February	552	560	211	
March	710	509	446	
April	809	617	482	
May	782	964	674	
June	1,162	772	436	
July	677	1,017	1,065	
August	447	481	514	
Totals for year...	8,710	7,661	6,177	
Increase over last yr.	3,741	263	1,479	
Average per month...	725+	638+	514+	

ELIZABETH B. SNELL,
Appointment Secretary.

UNIVERSITY CHAPLAIN

Church preferences of students. The following tables exhibit the church preferences of students entering the University in the autumn, winter and spring quarters.

<i>Autumn Quarter</i>			
Preferences		Men	Women
Baptist		33	6
Catholic		40	6
Congregational		41	14
Christian		23	1
Christian Science		45	11
Episcopal		81	17
Friends		4	....
Jewish		19	....
Lutheran		11	....
Methodist		98	23
Presbyterian		102	24
Protestant		12	2
Miscellaneous		7	....
		539	108
No preference		107	14
		646	122

Men		Women	
Per cent with preference.....	83.2	Per cent with preference.....	88.5
Per cent without preference.....	16.8	Per cent without preference.....	11.5

Winter Quarter

Preferences	Men	Women
Baptist	4	2
Catholic	11	2
Congregational	5	2
Christian	1	2
Christian Science	1	3
Episcopal	8	9
Friends	1	...
Jewish	6	...
Lutheran	1	...
Methodist	9	2
Presbyterian	10	8
Unitarian	2	1
Miscellaneous	2	...
	65	31
No preference	26	8
	91	39

Men		Women	
Per cent with preference.....	71.4	Per cent with preference.....	79.5
Per cent without preference.....	28.6	Per cent without preference.....	20.5

Spring Quarter

Preferences	Men	Women
Baptist	3	...
Catholic	14	4
Congregational	2	...
Christian	2	...
Christian Science	4	...
Episcopal	9	...
Methodist	13	3
Presbyterian	13	3
	60	10
No preference	20	2
	80	12

Men		Women	
Per cent with preference.....	75.0	Per cent with preference.....	83.4
Per cent without preference.....	25.0	Per cent without preference.....	16.6

The summary of these records shows that of 990 students entering the University in 1920-21, 813 were members of churches or had some preference.

PUBLIC WORSHIP

Morning Chapel has been held at 7:50 each day of the three terms, with an address by the Chaplain or an invited speaker. The attendance has been consistently good.

The Sunday morning service at 11 o'clock has been well attended.

On Sunday, February 13th, a service in memory of the late Chester Thomas was arranged, with addresses by Professor Stillman and Mr. Charles K. Field.

On Sunday, May 29th, a solemn service was held to honor the memory of the Stanford men who died in the Great War.

SOCIAL SERVICE

As President of the Board of Directors of the Stanford Home for Convalescent Children, the Chaplain has endeavored to help the philanthropic work of the Stanford Hospital Clinics, and to interpret the needs of sick children to the students and friends of the University. He has also continued to act as Chairman of the Social Service section of the Palo Alto chapter of the American Red Cross.

SPECIAL PREACHERS

The following named clergymen were invited to preach in the Memorial Church during the past academic year:

Autumn Quarter:

Bishop Moreland, Sacramento, Episcopalian (Two Sundays)

Rev. Richard Roberts, Brooklyn, Congregationalist

Rev. E. B. Speight, Berkeley, Unitarian

Rev. W. A. Betts, Los Angeles, Methodist

Winter Quarter:

Rev. Robert Freeman, Pasadena, Presbyterian

Bishop Nichols, San Francisco, Episcopalian

Rev. E. A. Wicher, San Anselmo, Presbyterian

Rev. J. H. Holmes, New York, Unitarian

Rev. Sam Higginbottom, India, Baptist

Sir Wilfred Grenfell, Labrador, Missionary to Seamen

Dean McDonald, Fresno, Episcopalian

Dean McCormack, Los Angeles, Episcopalian

Rev. Lloyd Douglas, Ann Arbor, Congregationalist (Two Sundays)

Spring Quarter:

Rev. W. H. Fishburn, Los Angeles, Presbyterian

Dean Scarlett, Phoenix, Arizona, Episcopalian (Two Sundays)

Professor Kenneth Saunders, Berkeley, Congregationalist

Rev. Willard L. Sperry, Boston, Congregationalist (Three Sundays)

Summer Quarter:

Rev. J. W. Gresham, San Francisco, Episcopalian

Rev. Charles R. Brown, Yale Divinity School, Congregationalist
(Four Sundays)

Rev. H. Wray Boyle, Denver, Presbyterian (Two Sundays)

Bishop Parsons, San Francisco, Episcopalian (Two Sundays)

DAVID CHARLES GARDNER,

Chaplain.

ORGANIST

ORGAN RECITALS

Seventy-seven programs of organ music were given at 111 regular recitals during the year on Sunday, Tuesday and Thursday afternoons. Tuesday's program is usually a repetition of the one played on Sunday. The recitals average a half-hour in length.

Six special recitals were given as follows:

January 19th, in honor of Dr. Jordan's 70th anniversary, Mr. Warren Watters, assisting soloist.

April 30th, for the Association of Collegiate Alumnae.

May 14th, for Alumni Day, the Glee Club assisting.

June 19th, for Baccalaureate Sunday, Harry Robertson, '10, assisting.

June 20th, for the American Guild of Organists, Northern California Chapter.

THE CHOIR

The average enrolment has been fifty voices, not counting the small choir for the summer quarter. The attendance of others not enrolled for credit has brought the average Sunday attendance to a still higher figure.

In addition to singing at the regular Sunday service, the Choir appeared at a Memorial Service on January 30th, for Chester A. Thomas, at which members of the Bohemian Club were assisting soloists.

Two special musical services were given by the Choir and University Orchestra, as follows:

December 12, 1920—St. Saens' Christmas Oratorio, and other Christmas music, with assisting soloists.

March 6, 1921—The Passion and Easter Music from Handel's "Messiah."

STUDENT MUSICAL ORGANIZATIONS

On February 22, 1921, a very creditable program was offered for the benefit of the European Student Relief, in the Assembly Hall, by the Schubert Club, Glee Club, Band and Orchestra.

The Glee Club made a tour of Southern California during the Easter recess, and caused much favorable comment on account of the improved standards which the Club is striving to maintain. The Club made a successful appearance with the San Francisco Symphony Orchestra at the University on January 25th, and other engagements in San Francisco and Los Angeles demonstrated that a University Glee Club is capable of artistic work of real musical merit.

The Schubert Club made several local appearances and included about thirty of the best women's voices in the University.

The University Orchestra has done exceptionally good work, and promises to be one of the best musical assets of the institution.

SYMPHONY AND FESTIVAL CONCERTS

Three concerts by the San Francisco Symphony Orchestra under Alfred Hertz were made possible by the organization of a Symphony Committee, including members of the faculty, officers of the student musical organiza-

tions, and the Peninsula Musical Association. The two concerts in the Assembly Hall, and the final concert in the Memorial Church on Founders' Day contributed the greatest musical stimulus the University has had for years.

On the evening of May 31st, a performance of Gounod's "Faust" was given in the Assembly Hall under the auspices of the Symphony Committee. All of the musical organizations of the University and community were represented. A cast of distinguished solo artists and a large number of men from the San Francisco Symphony Orchestra assisted our local singers and instrumentalists.

WARREN D. ALLEN,
Organist.

CURATOR

MUSEUM OF FINE ARTS

During the academic year 1920-21, the Museum of Fine Arts has continued rearrangements of its various collections as well as adding and displaying a number of acquisitions. These rearrangements have required the retinting of several rooms and the recoloring of a large number of display cases. A number of articles have been carefully examined and many of them preserved against deterioration. On examining the paintings in the Stanford and Hewes collections, a number were found to be in need of re-varnishing and in a number of instances parts were retouched as needed.

During the year the Stanford Memorial Room Collections, which have been in the process of restoration were completed and opened to the public. Articles in the old collection had in many instances become injured by long exposure. These were restored and by rearrangement the collection is now placed in subject groups, easily comprehended by the visitors and presenting an excellent opportunity for the study of the periods related to the founders and the early constructive years of the University. Other materials will be added to this collection as time will warrant their completion and installation.

A second room to be known as the Pioneer Room will contain many objects identified with the Pioneer days of the State of California as well as of the United States. This collection, well started, will be assembled around the pioneer engine, the "Governor Stanford", which now occupies the rotunda room in the right wing of the Museum. A liberal additional loan collection from Mr. and Mrs. Oldroyd of early American articles has been added to this Pioneer Room.

A number of cases have been installed containing a large group of fish fossils, donated by David Starr Jordan the previous year. These have been carefully labeled and additional specimens are being added from time to time to this valuable collection. There is included in this group the largest single specimen of fish fossil.

Other acquisitions of the year have been as follows:

Primitive Rice Mill and Pearl Shell Rake from the Philippines, by purchase.

Three jeweled portraits of Mr. and Mrs. Leland Stanford, and Leland Stanford, Jr., from the President's office.

Painting of Ancient Roman Arena Scene, donated by Mrs. Dorothy Hume-Reeves.

Petrified Tree from Canada, donated by Mr. Lyle Gustus.

Large collection of paintings from Thos. Welton Stanford estate.

Eight early California bank checks, from the President's office.

Aztec Sacrificial Stone and Aztec Stone Calendar, by purchase.

Several loan collections have been received during the year.

The Museum has been liberally visited by the faculty and students of the University as well as by visitors. The attendance on Mondays (free day) is increasing and the attendance on the paying days has also increased, the month of August, 1921, establishing a record of 1003 paid admissions. Many schools and classes have visited the Museum in connection with their school studies, such classes being admitted free through previous arrangement.

The total paid entries for the year are \$1722.25.

THOMAS WELTON STANFORD ART GALLERY

The Thomas Welton Stanford Art Gallery during the year has held a number of prominent art exhibitions and is becoming nationally recognized as a western art center.

Through arrangements with eastern exhibitors, good collections from New York, Boston, Chicago and Philadelphia galleries are exhibited in these galleries of the University. These exhibitions are displayed for a period of from one to four weeks, being changed to permit the next exhibition to be displayed.

In addition to the eastern material several groups of paintings from western artists have been shown, thus enabling the art public of the community to view in convenient form and under favorable exhibiting conditions, the best of American art.

The attendance has been regular and large and visitors express much pleasure and appreciation for this University educational public benefit.

Several of the exhibitions have been composed of art handicrafts and a program arranged with addresses and music was given in connection with the exhibition of Maya and Aztec art.

The exhibitions for the year are listed as follows:

November

Interior Decorations

War Memorial Photographs

Still Life Paintings by Mrs. W. H. Shockley

Sculpture by Miss Norton

December

French War Posters

Art Work from American Schools

Oil Paintings

January

Artistic Photographs from Pictorial Photographers of America

February

Oil Paintings by James Swinnerton

Lithograph Prints by Bolton Brown

March

Oil Paintings by noted American Artists

Pictures for Children

Designs by Stanford Graphic Arts Students

April

Water Color Paintings by Lorenzo P. Latimer

Collection of Prints from Print Rooms, San Francisco

May

Maya and Aztec Art supplied by Francesco Cornejo of San Francisco

June

Paintings by artists at Carmel

Water color Paintings by Percy Gray

Views of Stanford by California Camera Club

From September 1, to the end of October 1920, and July 1, to the end of August, 1921, the Art Gallery was wholly occupied by the Thomas Welton Stanford Collection of Paintings.

PEDRO J. LEMOS,

Curator.

THE REGISTRAR

The total number of students registering in 1920-21 (including the summer quarter) was 3,439. Of these, 1,926 had previously been in attendance; 1,513 were new students. As compared with 1919-20, there was an increase in old students of 128 and in new students of 362, making a total advance over the previous year of 490. The largest attendance of any one quarter was 2,495 (the autumn quarter), compared with 2,451 for the autumn quarter of the previous year. The large increase in the number of new students is due to the registration of new students in the Lower Division for the summer quarter, occasioned by the prospective increase in tuition fees beginning for students matriculating in and after October, 1921. The special provision permitting Federal Vocational Board students to register outside of the limited group has continued in effect during the year, and something over a hundred of these students are now in attendance.

The fourth summer quarter under the new four-quarter system registered a total of 1,132 students, an increase over 1920 of 447. As compared with 1920, there was an increase in old students of 107, new students, of 339. Of the 1,132 students, 277 were in graduate standing, 855 in undergraduate standing. Somewhat more than half as many courses were offered in the summer quarter as in any of the preceding quarters. No "popular"

courses were offered, but provision was necessarily made for more than 200 freshmen entering at this time to take advantage of the old tuition rates. Engineering was not represented.

WAR SERVICE CREDIT

In January, 1919, when students who had been active in the War began to return to the University, the Academic Council formulated certain provisions under which credit toward graduation could be claimed for service in the army or navy, or in special government investigations which involved technical or scientific training, comparable with regular courses in the University. It was provided that the various departments concerned should endeavor to assign unit values to such training in terms of outlined or acceptable courses. Credit was to be finally granted by the Committee on Advanced Standing upon departmental recommendations. It was further provided that the maximum credit for such war service should not exceed 45 units.

Under these provisions nearly 600 applications for credit have been received, and 556 students have actually been awarded war-service credit in varying amounts. Applications will no doubt continue to be received from time to time, but the number will not be large, and the work of the Committee in this respect may be considered as practically complete. A survey of the Committee's activities may be of interest.

It may be remarked at the outset that the work of adjustment has involved a great amount of labor and that the University provisions, which read so smoothly in print, have proved both difficult and unsatisfactory in action. The Committee at first assumed that the burden of adjustment had been placed upon the departments and that the Committee's task would be relatively simple. It soon became apparent that this was not the case. War service training was found to differ widely in many respects from college and university training, standards were uncertain, records meager, and the results set forth in quite unacademic terms. War training proved, in the main, untranslatable in terms of academic units; but since the transmutation must be accomplished if war training was to be made available toward graduation, departments generally turned to the yardstick with which the value of lecture and laboratory courses in the University is measured. In college classes, so many hours of lectures (with implied preparation and required reading), or so many hours of actual laboratory work, yield one unit of University credit. The application of this same hour standard to army and navy training courses would make the process of awarding credit a purely mathematical operation.

For a brief time the Committee automatically approved departmental recommendations made up in this way. It soon became evident, however, that there was overlapping and inequalities of adjustment. In one case, for ten weeks in the service the sum of departmental recommendations amounted to almost a full year of university credit. The Committee found it necessary to review departmental recommendations and eventually to contrive a Committee standard of valuation independent of departmental action. The

Council had provided for a maximum military credit (aside from technical courses which could be measured as Engineering, Chemistry, etc.) not to exceed 10 units. This maximum amount the Committee decided to allot as war service credit to all men who had been in the service for a year or more, and half the amount for not less than six months' service. For full time special training leading to a commission an allotment was made of one unit of credit per week; for practical courses supplementary to such commission (such as training on the flying field), half a unit per week. To avoid giving credit for mere lapse of time or for repeated courses, the Committee eventually came to estimate the training required to secure an infantry commission at about 13 units, an artillery commission, 20 to 25 units, an ensign's commission, or the training leading to a pilot's license on the flying field, about 25 units, variations being made according to differences in training in particular cases.

As the Committee reviews its work, it realizes that there have been many inequalities in adjustment. It does not doubt that, according to the standards set up by the Council, some students have received too many units, some too few. In the light of experience, were a similar occasion to arise, the Committee would recommend arbitrary graduated amounts of credit based on various lengths and kinds of service, with no attempt at careful or minute discrimination. In the present case, the Committee believes that the maximum credit was originally placed too high.

Some actual figures of Committee adjustments may be of interest. Only one student received the maximum amount of credit provided by the Council—45 units. This allotment was partly on the basis of training for and subsequent to a commission in the artillery, and partly for work taken at the University of Dijon. The tables show the general distribution.

Receiving 30 or more units.....	14
Receiving 20 or more, but less than 30.....	126
Receiving 10 or more, but less than 20.....	315
Receiving 1 or more, but less than 10.....	101
Total	556

A total of 7,726 units of credit has been granted, an average of 13.8 units per student. The average credit is somewhat lowered by the fact that a considerable number of students made application for a less amount of credit than would have been their due, but not needed to complete the requirements for graduation.

CHANGES IN REQUIREMENTS FOR ADMISSION

A revision of the regulations governing the admission of students, both men and women, was approved by the Academic Council in February, 1921. The purpose was to provide a practicable way of discriminating among candidates for admission in the limited group for men, to simplify the method of admission for women, and incidentally to apply the same principle of selection to men and women alike.

Limitation of the number of women students was promulgated by Mrs. Stanford in 1899 in an amendment to the Charter, providing "that the number of women attending the University as students shall at no time ever exceed

five hundred." At that time the number in attendance was under five hundred, and the limit was not reached until 1902. In 1904 special regulations were adopted by which preference was given to upper-classmen and graduates, and providing for the admission of under-classmen according to priority of application. In 1914 the preference given to upper-classmen was withdrawn and replaced by a provision for the admission of approximately half of the undergraduate women on the basis of "exceptionally high scholarship and special fitness." Meantime, the number of candidates continued to increase and the pressure for admission became more and more severe. In July, 1920, when the lists for the succeeding October were made up, there were found to be 532 candidates with complete credentials for the approximately 100 places open to new undergraduate women. On the Numbered List (according to priority of original application) the last candidate able to register in October, 1920, had made her first application August 28, 1916, or four years and two months in advance of the date of matriculation. This gap between application and admission had been constantly widening and was likely to become still greater. A count showed more than 2,400 applications on hand for undergraduate admissions during the next four years. In view of the Charter limitation, no device could be expected to relieve the pressure or to avoid disappointing the great majority of applicants. Since, however, in order to insure admission on the priority basis, it had become necessary that candidates apply before entering the high school, it was felt that this plan as a method of selection had outlived its usefulness.

The plan adopted in 1921 entirely discards the priority basis of admission (after the list of those applying before February 21, 1921, is exhausted). A certain number of places (one-fourth of the estimated total for new students) is temporarily allotted to the Numbered List. In regard to the remaining places, the new plan redefines the conditions under which candidates may be placed on the Preferred List. Three groups are provided: first, those who pass the Comprehensive Examinations of the College Entrance Examination Board with a high rating (an average grade of 75 in the four subjects); second, daughters of the alumni and faculty (upon fulfillment of minimum requirements); third, candidates selected from the remaining applicants on the basis of "superior fitness," taking into account exceptional qualifications of any kind, including scholarship, force of character, qualities of leadership, influence exerted among schoolmates and associates, physical vigor, and the like. One-fourth of the possible number is assigned to graduate candidates, who are likewise to be selected within this group on the basis of superior fitness.

The necessity of placing some limit upon the number of men in attendance as students has been a matter of discussion from time to time, but it was not until 1916 that a definite plan was formulated and approved by the Board of Trustees. The necessity of limitation being conceded, the plan starts from the obvious fact that a limitation upon the number of entering men in itself limits the total attendance. Moreover, it had been found upon investigation that the congestion actually occurring and likely to increase was in Lower Division classes, and not in connection with advanced and graduate work. Accordingly, instead of placing a limit upon total attendance,

as in the case of women, it was arranged that the limited group should include only men entering with less than a year and a half advanced credit. Provision was made for selection within the limited group by dividing candidates into two groups, according to a rough scholarship classification. The first group consisted of high-school graduates with recommending grades in all of the 15 units; the second group, of high-school graduates with recommending grades in at least 12 of the 15 units. None of the second group was to be admitted until after all of the first group had been taken care of.

The War postponed any necessity of excluding candidates until 1918, but in 1920 it was seen that the lower scholarship group would have to be entirely excluded, and that provision for further selection would presumably be needed in 1921 or 1922. The new plan provides the same machinery as in the case of women, and a Preferred List is arranged on the same general basis of superior fitness. Since, however, the number of places open to men in the limited group is at least six times as large as the number open to women in the corresponding group, the pressure, at least for a long time to come, is to be much less severe. For the present, it can be confidently stated that men candidates who are in the upper fifth of their graduating class, probably also those in the upper third, will be able to enter, provided their credentials are in hand by certain fixed dates specified in the new plan. The same general requirements apply to candidates for advanced standing from other colleges and universities. Fulfillment of minimum requirements means the equivalent of a graduating record (average C grade at Stanford). An average B grade grade will, for the present, insure admission, while candidates between C and B will have to take their chances with high-school graduates in the upper half and third of their classes.

STATISTICS

Statistics regarding registration and scholarship are given below. The colleges and schools from which new students were received have been arranged in order of scholarship standing. It is obvious, of course, that with one, two, or three students from a given school or college, the general rank of the school or college is in no way at stake. Only comparison during a series of years would be of value in this respect. The actual rating, nevertheless, may be interesting in and for itself.

The scholarship comparison between Preferred List and Numbered List women will be of more interest and serves in general to justify the method of selection.

DISTRIBUTION OF ENTERING CLASS, 1920-21

FROM COLLEGES, ETC.

(The statistics on the distribution of the entering class include the students who entered in the autumn, winter, spring and summer quarters of 1920-21. The statistics on the rating of the various schools and colleges include only the students who entered in the autumn, winter, and spring quarters.)

Albany College	1	Little Rock (Ark.) College.....	1
Ablene Christian College.....	1	Louisiana State University.....	1
Agricultural & Mechanical College of Texas	2	Luther College	1
Annapolis (Md.) Naval Academy..	3	McGill University	1
Barodo College	1	Massachusetts Institute of Tech- nology	1
Baylor University	3	Miami University	2
Brigham Young University.....	2	Michigan State Normal College....	1
Brown University	1	Michigan Agricultural College.....	1
Buchtel College	1	Mills College	26
Bucknell University	1	Monmouth College	2
California Institute of Technology	12	Mons (Belgium) State School of Mines	1
Canton Christian College.....	1	Montana Agricultural College.....	1
Case School of Applied Science....	1	Montana State College.....	1
Clark College	1	Mount Holyoke College.....	1
Clarkson College of Technology....	1	Netherlands Lyceum (The Hague) 2	
Coe College	1	N. M. Col. of Agr. & Mech. Arts... 2	
Colgate University	1	New Mexico State University..... 2	
College of Emporia.....	1	New York University.....	2
College of Hawaii.....	1	Nippon University	1
College of Maryland.....	1	Northwestern University	8
College of the Pacific.....	38	Notre Dame University.....	1
Colorado Teachers' College.....	3	Oberlin College	1
Colorado College	7	Occidental College	16
Colorado School of Mines.....	1	Ohio University	1
Columbia University (New York)...	8	Oregon Agricultural College.....	10
Cornell University	6	Otterbein College	1
Cumberland (Tenn.) University....	1	Parsons' College	1
Dartmouth College	1	Pekin Gov't. Teachers' College.... 1	
Delaware State College.....	1	Penn College	3
Denison University	1	Pomona College	16
De Pauw University.....	2	Queens College	1
Drake University	1	Reed College	3
Earlham College	1	Rice Institute	1
Fairmont College	1	Ripon College	2
Friends' University	1	Saint Ignatius University.....	1
Georgetown College	2	San Rafael Dominican College.... 1	
Gooding College	1	Santa Clara University	5
Gonzaga College	1	Simmons (Texas) College.....	1
Gordon College	1	Smith College	1
Grinnell College	1	Southern Illinois S. N. Univ..... 1	
Hamline University	2	St. Francis Xavier.....	1
Harvard University	3	Swarthmore College	2
Institute de Genzanddi Roma.....	1	Syracuse University	1
Iowa State College.....	3	Tohoku Imperial University.....	1
Iowa State Teachers' College.....	1	Trinity University	1
Jamestown (N. D.) College.....	1	Tulane University	1
Kansas Wesleyan University.....	1	U. S. Military Acad. (West Point) 2	
Kellogg University	1	University of Alabama	1
Kirksville State Teachers' College	1	University of Arizona	6
Knox College	1	University of Brussels	1
Lafayette College	1		

University of California.....	81	University of Pittsburgh	1
University of Calif., So. Branch....	5	University of Redlands	5
University of Chicago	11	University of Rochester	1
University of Cincinnati	2	University of South Carolina	2
University of Colorado	7	University of South Dakota	1
University of Colo. Teachers' Col.	1	University of Southern California..	28
University of Denver	4	University of Texas	3
University of Hawaii	2	University of Toronto	1
University of Idaho	6	University of Utah	10
University of Illinois	7	University of Vermont	1
University of Indiana	7	University of Washington	9
University of Iowa	3	University of Wisconsin	10
University of Kansas	5	Vassar College	4
University of Liege	1	Valparaiso University	4
University of Madras	1	Victoria Jubilee Technical Insti-	
University of Manitoba	1	tute (Bombay)	2
University of Mexico	1	Virginia Military Academy.....	1
University of Michigan	4	Wabash College	1
University of Minnesota	5	Waseda University	2
University of Mississippi	2	Washburn (Kansas) College.....	1
University of Missouri	4	Washington State College.....	9
University of Nebraska	4	Wells College	1
University of Nevada	5	Wellesley College	3
University of New Zealand	1	Western Reserve University.....	2
University of North Dakota	3	Willamette University	3
University of Oklahoma	2	Williams College	1
University of Oregon	9	Whitman College	1
University of the Philippines	1	Yale University	2

FROM STATE NORMAL SCHOOLS

Arcata State Normal School.....	1	Minnesota State Normal School...	1
Bloomburg (Pa.) State N. S.....	1	Northern Arizona Normal School..	2
Bridgewater (Mass.) State N. S....	1	Philippine Normal School.....	1
Chadron (Nebr.) State N. S.....	2	Salem (Mass.) State N. S.....	1
Chico State Normal School.....	5	Sam Houston Normal Tech. School	1
Fresno State Normal School.....	3	San Diego State Normal School....	2
Indianapolis State Normal School	1	San Francisco State Normal School	1
Kansas State Normal School.....	5	San Jose State Normal School.....	25
Kirksville (Mo.) State N. S.....	1	Santa Barbara State N. S.....	3
Lewiston (Ida.) State N. S.....	1	Superior (Wis.) State N. S.....	1
Los Angeles State Normal School	4	Valley City (N. D.) State N. S.....	1

FROM HIGH SCHOOL JUNIOR COLLEGES

Coalinga Junior College.....	1	Salinas Junior College.....	1
Detroit (Mich.) Junior College.....	1	San Benito Junior College.....	1
Eureka Junior College.....	1	San Diego Junior College.....	9
Ferry Hall Junior College.....	1	Santa Ana Junior College.....	2
Fresno Junior College.....	1	Santa Barbara Junior College.....	4
Fullerton Junior College.....	2	Santa Maria Junior College.....	1
Los Angeles Junior College.....	1	Santa Rosa Junior College.....	2
Riverside Junior College.....	4	Turlock Junior College.....	1

FROM PREPARATORY SCHOOLS

Abilene (Tex.) High School.....	2	Auburn High School.....	2
Adin High School.....	3	Bakersfield High School.....	4
Alameda High School.....	1	Bellefonte (Pa.) Academy.....	1
Alhambra High School.....	1	Berkeley High School.....	5
Allentown (Pa.) High School.....	1	Biggs High School.....	2
Ashland (Ohio) High School.....	2	Billings (Mont.) High School.....	2

Bishop High School.....	3	Gustine High School.....	1
Boise (Ida.) High School.....	1	Hagerman (Ida.) High School.....	1
Bowman (N. D.) High School.....	1	Harlowton (Mont.) High School.....	1
Brookville (Pa.) High School.....	1	Hayward High School.....	1
Brunswick (Ga.) Glynn Academy.....	1	Hebron (Nebr.) High School.....	1
Buhl (Ida.) High School.....	1	Helena (Mont.) High School.....	1
Burbank High School.....	1	Highgate (England) School.....	1
Butte (Mont.) High School.....	1	Highland Park (Mich.) H. S.....	1
Calexico High School.....	1	Hinsdale Township (Ill.) H. S.....	1
Canon City (Colo.) High School.....	1	Hollywood High School.....	17
Caracas (Venezuela) Liceo de Caracas		Hughson High School.....	2
Castle Heights (Tex.) Mil. Acad.	1	Hutchinson (Kans.) High School.....	1
Ceres High School.....	1	Ilo (Ida.) High School.....	1
Chicago, Illinois—		Iowa City (Ia.) High School.....	1
Senn High School.....	1	Jackson High School.....	1
Morgan Park High School.....	1	Jerome (Ida.) High School.....	1
Chicago Latin School.....	1	Johnson City (N. Y.) High School.....	1
Chico High School.....	2	Joplin (Mo.) High School.....	1
Clovis High School.....	3	Kallispell (Mont.) High School.....	2
Coalinga High School.....	1	Kankakee (Ill.) High School.....	1
Coeur d'Alene (Ida.) High School	1	Kansas City (Mo.) Country Day School	1
Colegio Mexicano (Mexico City)....	1	Kemper Hall (Kenosha, Wis.).....	1
Colusa High School.....	3	Kenilworth (Ill.) High School.....	1
Corona High School.....	1	Kingsburg High School.....	1
Coronado High School.....	3	Klamath Falls (Ore.) High School.....	1
Corvallis (Ore.) High School.....	2	La Grande (Ore.) High School.....	1
Council Bluffs (Ia.) High School.....	1	Lakeport High School.....	1
Courtland High School.....	3	Las Animas (Colo.) High School.....	1
Culver (Ind.) Military Academy.....	5	Lewiston (Ida.) High School.....	2
Dallas, Texas—		Lexington (Mo.) Military Academy.....	1
Bryan High School.....	1	Libertyville (Ill.) High School.....	4
The Terrill School.....	1	Lincoln High School.....	1
Deerfield (Wis.) St. John's Military Academy	1	Lindsay High School.....	4
Delta (Colo.) High School.....	1	Lodi High School.....	1
Denver (Colo.) East Side H. S.....	2	Long Beach Polytechnic H. S.....	4
Dickinson (N. D.) High School.....	1	Los Angeles—	
Dinuba High School.....	2	Cumnock School.....	1
Duluth (Minn.) Central H. S.....	2	Franklin High School.....	1
Elk City (Okla.) High School.....	1	Girls' Collegiate.....	2
Elko (Nev.) High School.....	1	Harvard School.....	3
Eureka High School.....	3	Jefferson High School.....	2
Evanston (Ill.) High School.....	1	Lincoln High School.....	1
Fairmont (Minn.) High School.....	1	Los Angeles High School.....	56
Fort Bragg High School.....	2	Los Angeles Polytechnic H. S.....	10
Fort Scott (Kans.) High School.....	1	Manual Arts High School.....	3
Fortuna High School.....	1	Westlake School for Girls.....	1
Fort Worth (Tex.) High School.....	2	Los Gatos High School.....	1
Franklin (Ore.) High School.....	1	Lyons (Ill.) High School.....	1
Fresno High School.....	11	Madera High School.....	2
Fullerton High School.....	2	Malvern House School (Northing, England)	1
Gage (Ore.) High School.....	1	Mansfield (Ohio) High School.....	1
Gallatin Co. (Mont.) High School	2	Marysville High School.....	1
Gardnerville (Nev.) High School.....	1	Menlo Park Wm. Warren School.....	5
Glendale High School.....	1	Merced High School.....	3
Grant's Pass (Ore.) High School.....	2	Middleton High School.....	1
Great Falls (Mont.) High School.....	3	Milwaukee (Wis.) West H. S.....	1
Gresham (Ore.) High School.....	1		

Minneapolis, Minnesota—		Redwood City High School.....	8
West High School.....	1	Reedley High School.....	1
Northrop Collegiate School.....	1	Richmond High School.....	1
Missoula (Mont.) High School.....	1	Ripon High School.....	1
Modesto High School.....	10	Riverside—	
Monterey High School.....	3	Polytechnic High School.....	3
Montezuma Mtn. Ranch School.....	5	Riverside Girls' High School.....	1
Montrose (Colo.) High School.....	1	Rockford (Ill.) High School.....	1
Morgan Park (Chicago) Military Academy.....	1	Rosebud (Mont.) High School.....	1
Mountain View High School.....	19	Roseville High School.....	3
Mount Sterling (Ill.) High School.....	1	Roswell (N. M.) High School.....	1
Myrtle Creek (Ore.) High School.....	1	Rupert, (Ida.) High School.....	1
Nampa (Ida.) High School.....	1	Sacramento High School.....	6
Napa High School.....	1	Salinas High School.....	5
Needles High School.....	1	Salt Lake City High School.....	3
Nevada City High School.....	3	San Antonio (Tex.) Main Avenue High School.....	2
North Platte (Neb.) High School.....	1	San Bernardino High School.....	4
Oakdale High School.....	1	San Diego High School.....	7
Oakland—		San Diego Army & Navy Acad.....	3
Fremont High School.....	2	San Fernando High School.....	1
Oakland High School.....	1	San Francisco—	
Oakland Technical High School.....	2	California School of Mech. Arts.....	14
University High School.....	9	Girls' High School.....	4
Oberon (N. D.) High School.....	1	Lowell High School.....	35
Ontario High School.....	3	Mission High School.....	1
Orange High School.....	1	Polytechnic High School.....	16
Orosi High School.....	1	Potter School.....	13
Ottawa (Ill.) High School.....	1	University School.....	7
Oxnard High School.....	1	Sanger High School.....	1
Pacific Grove High School.....	1	San Jose—	
Palo Alto—		San Jose High School.....	31
Palo Alto High School.....	82	Notre Dame High School.....	1
Castilleja School.....	9	San Luis Obispo California Polytechnic.....	1
Miss Harker's School.....	3	San Mateo High School.....	11
Palo Alto Military Academy.....	3	San Rafael—	
Seale Academy.....	1	San Rafael High School.....	1
Panhandle Agr. (Okla.) Institute.....	2	Hitchcock Military Academy.....	1
Parsons (Kans.) High School.....	1	Mt. Tamalpais Military Academy.....	2
Pasadena High School.....	13	Santa Ana High School.....	3
Paso Robles High School.....	1	Santa Barbara High School.....	4
Patterson High School.....	1	Santa Clara High School.....	6
Petaluma High School.....	2	Santa Cruz High School.....	3
Phoenix (Ariz.) High School.....	10	Santa Monica High School.....	10
Placerville High School.....	1	Santa Paula High School.....	1
Port Angeles (Wn.) High School.....	1	Santa Rosa High School.....	6
Portland, Oregon—		Scarborough (N. Y.) High School.....	1
Jefferson High School.....	7	Sebastopol High School.....	2
Lincoln High School.....	3	Sedro-Woolley (Wn.) High School.....	1
Washington High School.....	2	South Melford (Ind.) High School.....	1
Princeton High School.....	1	South Pasadena High School.....	4
Prosser (Wn.) High School.....	1	South San Francisco High School.....	1
Protection (Kans.) High School.....	1	Spokane, Washington—	
Pulaski (Tenn.) Massey Military Academy.....	1	Lewis and Clark High School.....	2
Punahou (Honolulu) Academy.....	1	North Central High School.....	3
Red Bluff High School.....	1	Staunton (Va.) Military Academy.....	1
Redlands High School.....	2	Stevenson (Wn.) High School.....	1
Redondo High School.....	1		

Stockton High School.....	6	Wasatch Academy (Mt. Pleasant, Ohio)	1
Swarthmore Preparatory School...	1	Wasco High School.....	1
Tacoma (Wn.) Stadium H. S.....	1	Washington (D. C.) West. H. S. ..	1
Taft High School.....	1	Washington (N. J.) High School ..	1
Tamalpais High School.....	2	Waterville (Wn.) High School.....	1
Terre Haute (Ind.) Normal Training High School.....	2	Watseka (Ill.) High School.....	1
Three Forks (Mont.) High School ..	1	Watsonville High School.....	3
Tracy High School.....	1	Waverley (Ida.) High School.....	1
Tucson (Ariz.) High School.....	1	Waukegan (Ill.) High School.....	1
Tulare High School.....	1	Wellston (Ohio) High School.....	1
Tulsa (Okla.) High School.....	1	Whatcom (Wn.) High School.....	2
Twin Falls (Ida.) High School.....	3	Wheatland (Wyo.) High School....	1
Uniontown (Pa.) High School.....	1	Whittier High School.....	1
Vallejo High School.....	2	Willits High School.....	1
Venice High School.....	2	Willows High School.....	1
Vinton (Ia.) High School.....	1	Wilmington High School.....	2
Walla Walla (Wn.) High School....	1	Wilsall (Mont.) High School.....	1
Ward Belmont School (Nashville, Tenn.)	1	Winnemucca (Nev.) High School..	1
		Woodland High School.....	1
		Yakima (Wn.) High School.....	1

COMPARATIVE REGISTRATION, 1916-17 TO 1920-21

	1916-17	1917-18*	1917-18†	1918-19	1919-20	1920-21
Old students	1,440	1,077	269	1,214	1,798	1,926
New students	738	826	97	1,053	1,151	1,513
Totals.....	2,187	1,903	366	2,267	2,949	3,439
Pct. of returning students..	65.8	49.2		63.7	79.2	65.3
From California	1,629	1,441		1,728	2,123	2,477
From other states & countr.	558	462		539	826	962
Pct. outside California	27.0	24.2		23.7	28	27.0

AVERAGE AGE OF MATRICULATES

	1916-17	1917-18*	1917-18†	1918-19	1919-20	1920-21
Graduates	27.6	29.6	33.5	30.0	30.30	29.92
Advanced standing	19.8	21.2	28.5	23.8	23.08	22.98
Freshmen	19.3	19.2	18.9	19.6	19.46	18.91
Specials	23.2	22.9	37.4	25.1	25.72	26.47

AGE OF FRESHMEN AT MATRICULATION

	1916-17	1917-18*	1917-18†	1918-19	1919-20	1920-21
Under 17 years.....	17	3	1	19	37	51
17-18 years	83	79	6	87	81	164
18-19 years	141	137	3	239	205	278
19-20 years	120	128	1	173	123	159
Over 20 years	112	97	2	145	170	135
Totals.....	473	444	13	663	616	787

DISTRIBUTION OF ENTERING CLASS

	1917-18*	1917-18†	1918-19	1919-20	1920-21
From Colleges—					
Graduates	67	36	80	146	196
With advanced standing.....	157	25	221	200	355
Without advanced standing.....			6		17
Totals.....	224	61	307	436	568
From Normal Schools.....	20	19	26	34	64
From High School Junior Colleges.....	31	1	37	17	36
From Preparatory Schools—					
On recommendation (wholly or mainly)					
In full standing	442	13	650	614	800
Wholly on examination	2			3	3
Special students	9	3	24	47	42
Totals.....	728	97	1,053	1,151	1,513

SCHOLARSHIP STANDING—SCHOOL DISTRIBUTION

NORMAL SCHOOLS

Name of School	Total Number of Students	Total Number Leave of Absence	Average Scholar- ship Grade
1 San Diego (SN)	1		91.10
2 No. Arizona (N)	1		90.10
3 Philippines (N)	1		90.01
4 Chico (SN)	1		86.53

* Omitting summer quarter.

† Summer quarter only.

Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
5 Los Angeles (SN)	1	.....	83.06
6 Sam Houston (NI)	1	.....	81.86
7 San Jose (SN)	4	.....	79.29
8 Chadron (SN) (Neb.)	2	.....	77.35
9 Bloomsburg (SN) (Pa.)	1	.....	75.16
10 So. Illinois (SN Univ.)	1	.....	74.07
Totals	14	.....	.....
General average of all .....	.....	.....	82.15

FOREIGN SCHOOLS

Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
1 University of Madras	1	.....	91.34
2 University of New Zealand	1	.....	89.28
3 University of Liege	1	.....	87.90
4 Netherlands Lyceum (The Hague)	1	.....	82.92
5 Canton Christian College	1	.....	82.64
6 Victoria Jub. Tech. Inst. (Bombay)	2	.....	80.81
7 Highgate School (England)	1	.....	79.78
8 Malvern School (England)	1	.....	78.61
9 Waseda University	1	.....	77.20
10 Mons School of Mines	1	.....	76.92
11 Liceo de Caracas	1	.....	76.52
12 University of Philippines	1	.....	76.44
13 Peking Government Teachers College	1	.....	62.44
14 Kelogijiko University	1	.....	57.88
15 School of Mines, University of Mexico	1	.....	25.00
16 Tohoku Imperial University (Japan)	1	.....	+
17 Campino (Brazil) .....	.....	1	lv. abs.
Totals	17	1	.....
General average of all .....	.....	.....	77.71

UNIVERSITIES AND COLLEGES

Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
1 Mt. Holyoke	1	.....	91.25
2 McGill	1	.....	91.22
3 Rochester	1	.....	91.20
4 Vassar	5	.....	89.75
5 Wells	1	.....	89.55
6 Smith	1	.....	88.45
7 Knox	1	.....	88.22
8 Cincinnati	1	.....	87.78
9 Wellesley	2	.....	87.43
10 Iowa State	2	.....	86.99
11 University of Colorado	6	1	86.64
12 Arizona	2	.....	86.35
13 Indiana	2	.....	86.13
14 Pittsburgh	1	.....	85.80
15 Montana Agricultural College	1	.....	85.06
16 Emporia	1	.....	85.63
17 Colgate	1	.....	84.53
18 Mississippi	1	.....	84.30
19 Nebraska	2	.....	84.20
20 Texas	1	.....	83.70

	Name of School	Total Number of Students	Total Number Leave of Absence	Average Scholar- ship Grade
21	Whitman	1		83.11
22	Drake	1		83.00
23	Williams	1		81.63
24	Miami	1		81.58
25	Brigham Young	2		81.50
26	Coe	1		81.46
27	Texas A. & M.	2		81.41
28	Ohio	1		81.40
29	Luther	1		81.24
30	Colorado Teachers'	2		81.15
31	Western Reserve	1		80.89
32	Minnesota	4	1	80.48
33	Northwestern	6		80.37
34	Reed	2		80.32
35	Denver	3		80.11
36	Syracuse	2		79.99
37	Hawaii	2	1	79.97
38	Texas	1		79.70
39	Colorado College	6		79.24
40	Grinnell	1		79.22
41	Colorado School of Mines	1		79.20
42	Iowa	2	1	79.01
43	Dartmouth	1		78.91
44	Chicago	8		78.90
45	Delaware State	1		78.78
46	Maryland	1		78.66
47	McCormick Theological Seminary	1		78.62
48	Washington State	6		78.09
49	Friends	1		77.74
50	Louisiana State	1		77.71
51	DePauw	2		77.40
52	Kansas	4		77.09
53	Cornell	4		77.05
54	Oregon Agricultural College	5		77.05
55	Idaho	4		76.58
56	University of Washington	7		76.44
57	Oregon	4		76.30
58	Occidental	11		76.19
59	Harvard	3		76.10
60	Agricultural Institute (Okla.)	2		76.02
61	Gooding	1		75.86
62	Southern California (U.S.C.)	27	2	75.60
63	Transylvania (Kentucky)	1		75.21
64	Illinois	4		75.17
65	California	35	1	75.14
66	Mills	10		74.99
67	Baylor	1		74.79
68	Pomona	10		74.56
69	Iowa State Teachers'	1		74.43
70	College of the Pacific	27		74.29
71	Santa Clara	2		74.16
72	New York	1		74.00
73	Wisconsin	6		73.60
74	Fairmount	1		73.02
75	Columbia	4		72.99
76	Jamestown	1		72.39
77	North Dakota	3		72.29

	Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
78	Notre Dame	1	-----	70.80
79	Utah	7	-----	70.62
80	George Washington	1	-----	69.84
81	Pennsylvania State	2	-----	69.76
82	Yale	1	-----	69.50
83	Vermont	1	-----	69.40
84	Valparaiso	3	-----	68.78
85	Swarthmore	1	-----	67.50
86	Michigan	2	-----	67.47
87	Dominican	1	-----	67.21
88	Bucknell	1	-----	67.02
89	Oklahoma	1	-----	66.81
90	Ripon	1	-----	66.77
91	Redlands	3	-----	66.33
92	Nevada	3	-----	65.81
93	Montana State	1	-----	64.16
94	St. Ignatius	1	-----	62.60
95	Missouri	2	-----	62.59
96	Georgetown	1	-----	62.22
97	Monmouth	2	-----	61.11
98	Clark	1	-----	60.80
99	New Mexico A. & M.	2	-----	59.55
100	Gonzaga (Washington)	1	-----	54.47
101	Cumberland (Tennessee)	1	-----	47.07
102	Ferry Hall Jr. Coll.	1	-----	46.64
103	Little Rock	1	-----	40.40
104	Tulane	1	-----	37.68
Totals.....		343	7	-----
General average of all.....		-----	-----	76.99

SCHOOLS OF TECHNOLOGY

	Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
1	Massachusetts Institute of Technology ..	1	-----	87.33
2	California Institute of Technology	8	-----	77.79
3	California School Mech. Arts (S.F.)	12	-----	77.52
4	Case School of Applied Science	1	-----	73.60
5	Clarkson College of Technology	1	-----	45.80
Totals.....		23	-----	-----
General average of all.....		-----	-----	76.95

CALIFORNIA PUBLIC HIGH SCHOOLS

	Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
1	Paso Robles	1	-----	88.27
2	Glendale	2	-----	87.80
3	Tulare	1	-----	85.50
4	Pacific Grove	1	-----	84.91
5	Riverside Polytechnic	1	-----	84.54
6	Los Angeles (Manual Arts)	2	-----	84.04
7	Lindsay	4	-----	83.98
8	Redwood City	2	-----	83.75
9	Long Beach	3	-----	83.50
10	Coalinga	1	-----	83.12
11	Santa Barbara	3	-----	82.14

	Name of School	Total Number of Students	Total Number Leave of Absence	Average Scholar- ship Grade
12	San Francisco (Girls' High).....	1		82.04
13	Vallejo	1		81.48
14	Hanford	2		81.33
15	Santa Rosa	6		80.42
16	Colusa	2		80.12
17	Santa Clara	4		79.97
18	Lakeport	1		79.34
19	Stockton	4		79.29
20	Willits	1		78.87
21	San Mateo	8	1	78.75
22	Santa Paula	1		78.74
23	Lodi	1		78.71
24	Dinuba	2		78.71
25	San Rafael	1		78.35
26	Riverside Girls'	1		78.21
27	Coronado	1		77.85
28	Sanger	1		77.33
29	Pasadena	9		77.30
30	Marysville	1		76.94
31	Eureka	3		76.82
32	San Jose	18		76.74
33	San Diego	5		76.71
34	Venice	2		76.55
35	Woodland	1		76.50
36	Fresno	9		76.45
37	Jackson	1		76.42
38	Palo Alto	46		75.83
39	Auburn	2		75.70
40	Ripon	1		75.24
41	Santa Cruz	2		75.10
42	Oakland (University H. S.).....	6		74.92
43	Roseville	3		74.91
44	San Bernardino	4		74.80
45	Los Angeles (Polytechnic).....	9		74.57
46	Hollywood	12		74.46
47	San Francisco (Polytechnic).....	14		74.45
48	Patterson	1		74.38
49	Los Angeles	30	2	74.15
50	Bakersfield	2		74.15
51	Corona	1		74.01
52	Santa Monica	6		73.64
53	Orange	1		73.60
54	Middleton	1		73.45
55	Reedley	1		72.64
56	Whittier	1		72.61
57	Burbank	1		72.60
58	Redlands	4		72.42
59	Sacramento	6		72.35
60	Oakland (Fremont H. S.).....	1		72.35
61	San Francisco (Lowell H. S.).....	27		72.22
62	Willows	1		71.94
63	Ceres	1		71.64
64	Bishop	3		70.63
65	Tracy	1		70.63
66	San Fernando	1		70.18
67	Modesto	6		70.13
68	Mountain View	12		70.12

	Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
69	Napa	1		70.04
70	Watsonville	3		70.01
71	Petaluma	2		69.05
72	Berkeley	3		69.86
73	Tamalpais	1		69.71
74	Fullerton	1		69.64
75	Los Angeles	1		69.22
76	Nevada City	1		68.66
77	Clovis	3		68.62
78	Santa Ana	3		68.25
79	Merced	1		67.98
80	Sebastopol	1		67.98
81	Wilmington	2		67.54
82	Red Bluff	1		66.84
83	Oakdale	1		65.78
84	Los Gatos	1		65.28
85	Alameda	1		64.86
86	Oakland Technical (H. S.)	1		63.54
87	Princeton	1		62.66
88	South Pasadena	1		61.41
89	Chico	2		61.00
90	Adin	3		56.54
91	Wasco	1		55.97
92	Placerville	1		53.69
93	Ontario	1		52.59
94	Hughson	1		50.56
95	Los Angeles (Lincoln H. S.)	1		48.81
96	Alhambra	1		48.74
97	Lincoln (Union)	1		47.13
98	Monterey	2		45.96
99	Los Angeles (Jefferson H. S.)	1		38.06
100	Franklin		1	
101	Ft. Bragg		2	
102	Mission		1	
103	Salinas		1	
Totals		366	8	
General average of all				75.25

HIGH SCHOOLS OUTSIDE OF STATE

	Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
1	Whatcom (Wn.)	1		92.88
2	Joplin (Mo.)	1		90.90
3	Canon City (Colo.)	1		89.46
4	Hagerman (Idaho)	1		88.68
5	Bellingham (Wn.)	1		86.91
6	Stevenson (Wyo.)	1		86.42
7	Minneapolis (Minn.)	1		86.41
8	Denver—East Side (Colo.)	2		86.30
9	Lincoln (Neb.)	1		86.05
10	Vinton (Iowa)	1		86.01
11	Council Bluffs (Iowa)	1		84.84
12	Hebron (Neb.)	1		84.61
13	Ottawa (Ill.)	1		84.42
14	Hinsdale (Ill.)	1		84.04
15	Gresham (Ore.)	1		83.76
16	Montrose (Colo.)	1		83.47

	Name of School	Total Number of Students	Total Number Leave of Absence	Average Scholar- ship Grade
17	Kenilworth (Ill.)	1		83.38
18	Butte (Mont.)	1		83.10
19	Needles (Ariz.)	1		82.74
20	Tacoma—Stadium (Wn.)	1		82.56
21	Twin Falls (Idaho)	3		82.56
22	Yakima (Wn.)	1		81.98
23	Winnemucca (Nev.)	1		81.71
24	Washington (D.C.)	1		81.52
25	Washington (N.J.)	1		81.07
26	Klamath Falls (Ore.)	1		81.02
27	Parsons (Kans.)	1		80.91
28	Duluth (Minn.)	2		80.19
29	Helena (Mont.)	1		80.12
30	North Platte (Neb.)	1		80.08
31	Rockford (Ill.)	1		79.55
32	Three Forks (Mont.)	1		79.54
33	Iowa City (Iowa)	1		79.31
34	Elko (Nev.)	1		78.93
35	Salt Lake City (Utah)	3		78.83
36	Evanston (Ill.)	1		78.51
37	Detroit (Mich.)	1		78.38
38	Valley City (N.D.)	1		78.04
39	Ilo (Idaho)	1		77.88
40	Waterville (Wn.)	1		77.85
41	Ashland (Ohio)	1		77.76
42	Corvallis (Ore.)	1		77.60
43	Boise (Idaho)	1		77.54
44	Watseka (Ill.)	1		77.52
45	Norm. Tr. H. S. (Terre Haute, Ind.)	2		77.28
46	Spokane (Wn.)	5		76.89
47	Sedro-Woolley (Wn.)	1		75.90
48	Mansfield (Ohio)	1		75.88
49	Wilsall (Mont.)	1		75.88
50	Portland (Ore.)	11		75.87
51	Walla Walla (Wn.)	1		75.84
52	Franklin (Ore.)	1		75.29
53	Highland Park (Mich.)	1		74.67
54	Missoula (Mont.)	1		74.40
55	Senn (Chicago, Ill.)	1		73.50
56	Gage City (Okla.)	1		73.13
57	Harlowton (Mont.)	1		72.90
58	Billings (Mont.)	2		72.59
59	Gallatin (Mont.)	2		72.57
60	Great Falls (Mont.)	3		72.52
61	Allentown (Pa.)	1		72.50
62	Rupert (Idaho)	1		72.33
63	Kankakee (Ill.)	1		72.02
64	Nampa (Idaho)	1		72.00
65	Kalispell (Mont.)	2		71.79
66	Terrill (Dallas, Texas)	1		71.76
67	Oberon (N. D.)	1		71.41
68	La Grande (Ore.)	1		71.29
69	Protection (Kans.)	1		70.10
70	Prosser (Wn.)	1		69.40
71	Coeur d'Alene (Idaho)	1		68.64
72	Phoenix (Ariz.)	4		67.86
73	Dickinson (N. D.)	1		67.18
74	San Antonio (Texas)	2		66.18

Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
75 Waukegan (Ill.)	1		65.53
76 Buhl (Idaho)	1		65.50
77 La Grange (Ill.)	1		65.50
78 Tucson (Ariz.)	1		64.67
79 Abilene (Texas)	2		63.63
80 Lewiston (Idaho)	2		63.48
81 Gardnerville (Nev.)	1		62.24
82 Elk City (Okla.)	1		61.71
83 Fairmont (Minn.)	1		61.58
84 Brookville (Pa.)	1		60.97
85 Rosebud (Mont.)	1		60.84
86 Myrtle Creek (Ore.)	1		60.82
87 Dallas (Texas)	1		59.64
88 Uniontown (Pa.)	1		59.14
89 Wellston (Ohio)	1		59.10
90 Ashland (Ohio)	1		56.81
91 Tulsa (Okla.)	1		47.85
92 Libertyville (Ill.)	1		46.48
93 Country Day School (Mo.)	1		46.07
94 Delta (Colo.)	1		43.22
95 Roswell (New Mex.)	1		35.00
Totals	127		
General average of all			75.20

JUNIOR COLLEGES

Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
1 Santa Ana	1		90.12
2 Coalinga	1		86.16
3 Santa Maria	1		82.96
4 Riverside	2		79.64
5 Fullerton	2		79.51
6 Detroit (Mich.)	1		78.38
7 Chaffey	1		75.00
8 Los Angeles	4		74.73
9 San Diego	3		71.09
10 San Benito	1		70.36
11 Bakersfield	1		69.73
12 Eureka	1		65.98
13 Santa Barbara	4		64.61
Totals	23		
General average of all			74.35

EXAMINATION BOARDS, SPECIALS, ETC.

Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
1 New York Regents Dept.	2		88.37
2 College Entrance Exam. Board	1		78.79
3 Specials	22	4	73.08
4 Dept. Educ. Ex. (Canada)	1		69.09
5 Oxford, Sr. Local Exams.	1		53.40
Totals	27	4	
General average of all			74.23

PRIVATE SCHOOLS

Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
1 Westlake (L. A.)	1		89.22
2 Castilleja (P. A.)	4		85.05
3 Notre Dame (S. J.)	1		83.00
4 Cumnock (L. A.)	1		78.49
5 Girls' Collegiate (L. A.)	1		76.33
6 Swarthmore Prep.	1		76.15
7 Ward Belmont	1		75.30
8 Potter School (S. F.)	7		75.29
9 Scarborough (N. Y.)	1		73.31
10 Miss Harker's (P. A.)	3		72.82
11 Montezuma	5		70.71
12 University School (S. F.)	1		70.56
13 Harvard (L. A.)	3		67.12
14 Shattuck (Berkeley)	2		65.22
15 Randolph (Berkeley)	1		56.86
Totals	33		
General average of all			73.91

MILITARY ACADEMIES

Name of School	Total Number of Students	Total Number Leave of Absence	Av'ge Scholar- ship Grade
1 Wentworth	1		81.59
2 Morgan Park (Ill.)	1		77.83
3 Culver	5		77.15
4 William Warren	1		76.63
5 Virginia Military Institute	1		76.07
6 Virginia (Staunton)	1		74.92
7 United States Military	1		74.40
8 Massey	1		73.37
9 St. Johns (Wis.)	2		72.28
10 United States Naval	3		72.01
11 Hitchcock	1		68.75
12 San Diego Army and Navy	3		68.75
13 Glynn (Brunswick, Ga.)	1		68.37
14 Mt. Tamalpais	1		60.32
15 Palo Alto	3		54.27
16 Castle Heights (Tenn.)	1		40.40
17 Seale (P. A.)	1		38.92
18 Punahou (Hawaii)		1	
Totals	28	1	
General average of all			70.33

SCHOLARSHIP STANDING

During 1920-21 (Autumn, Winter, and Spring Quarters), 1021 students registered in the University for the first time. In computing scholarship standing arbitrary values have been assigned to the grade marks in use, as follows: A+, 97; A, 94; A-, 90; B+, 87; B, 84; B-, 80; C+, 77; C, 74; C-, 70; D+, 67; D, 64; D-, 60; \pm , 50; (-), 25. Plus grades have been disregarded and therefore counted as the average of all the other grades.

The average scholarship grade of the 1000 students (omitting 21 who withdrew before making any record) is 75.53. A distribution among groups and classes shows the following results:

SCHOLARSHIP OF MEN

Status	No. of Students	Average Grade
Graduates (of other colleges).....	59	77.89
Advanced standing (from other colleges).....	249	75.16
Specials.....	20	72.42
Freshmen.....	476	73.90
Average of all groups.....	804	74.88
Freshmen—		
From public schools.....	420	74.05
From private schools.....	56	72.68

SCHOLARSHIP OF WOMEN

Status	No. of Students with records	Average Grade
Graduates.....	47	82.66
Advanced standing.....	53	78.73
Freshmen.....	96	79.90
Average of all groups.....	196	80.20
Freshmen—		
From private schools.....	13	78.22
From public schools.....	83	80.22
Advanced standing—		
Preferred list.....	16	86.23
Numbered list.....	37	75.58
Average.....	53	78.73
Freshmen—		
Preferred list.....	60	84.90
Numbered list.....	36	74.46

SCHOLARSHIP STANDING

SCHOOL DISTRIBUTION FORM

1. Total number of students registering in University for first time during 1920-21
(autumn, winter, spring quarters)..... 1021
2. Total number of the above number who withdrew before making any record..... 21
3. Total number remaining..... 1000
4. Average scholarship grade of total number remaining..... 75.53
5. Distribution as follows:

No. of Schools	Kind of Schools	Total No. of Students	Total No. Lv. of Abs.	Average Scholar- ship Grd.
10	Normal Schools.....	14	0	82.15
17	Foreign Schools.....	17	1	77.71
104	Universities and Colleges.....	343	7	76.99
5	Schools of Technology.....	23	0	76.95
104	High Schools in State of California.....	366	8	75.25
95	High Schools outside of State of California.....	127	0	75.20
13	Junior Colleges.....	23	0	74.85
5	Exam. Boards, Specials, etc.....	27	4	74.23
14	Private Schools.....	32	0	73.91
18	Military Academies.....	28	1	70.33
Tot'ls 385		1000	21	
	Average of all.....			75.53

SCHOOL RATING IN ORDER OF RANK

	Name of School	Type of School	Location	Number of Students		Total	Average Sch'ship Rating
				Men	Women		
1	Whatcom	Public H. S.	Washington	1	1	1	92.88
2	Joplin	Public H. S.	Missouri	1	1	1	90.90
3	Canon City	Public H. S.	Colorado	1	1	1	89.46
4	Westlake	Private H. S.	Los Angeles	1	1	1	89.22
5	Hagerman	Public H. S.	Idaho	1	1	1	88.68
6	Paso Robles	Public H. S.	California	1	1	1	88.27
7	Glendale	Public H. S.	California	2	2	2	87.80
8	Bellingham	Public H. S.	Washington	1	1	1	86.91
9	Stevenson	Public H. S.	Wyoming	1	1	1	86.42
10	Minneapolis	Public H. S.	Minnesota	1	1	1	86.41
11	East Side	Public H. S.	Denver, Colo.	1	1	2	86.30
12	Lincoln	Public H. S.	Nebraska	1	1	1	86.05
13	Vinton	Public H. S.	Iowa	1	1	1	86.01
14	Tulare	Public H. S.	California	1	1	1	85.50
15	Castilleja	Private H. S.	Palo Alto, Calif.	4	4	4	85.05
16	Pacific Grove	Public H. S.	California	1	1	1	84.91
17	Council Bluffs	Public H. S.	Iowa	1	1	1	84.84
18	Hebron	Public H. S.	Nebraska	1	1	1	84.61
19	Riverside	Pub. Poly. H. S.	California	1	1	1	84.54
20	Manual Arts	Public H. S.	Los Angeles	2	2	2	84.04
21	Ottawa	Public H. S.	Illinois	1	1	1	84.42
22	Hinsdale	Public H. S.	Illinois	1	1	1	84.04
23	Lindsay	Public H. S.	California	3	1	4	83.98
24	Gresham	Public H. S.	Oregon	1	1	1	83.76
25	Redwood City	Public H. S.	California	2	2	2	83.75
26	Long Beach	Public H. S.	California	1	2	3	83.50
27	Montrose	Public H. S.	Colorado	1	1	1	83.47
28	Kenilworth	Public H. S.	Illinois	1	1	1	83.38
29	Coalinga	Public H. S.	California	1	1	1	83.12
30	Butte	Public H. S.	Montana	1	1	1	83.10
31	Notre Dame	Private H. S.	San Jose	1	1	1	83.00
32	Needles	Public H. S.	California	1	1	1	82.74
33	Stadium	Public H. S.	Tacoma, Wn.	1	1	1	82.56
34	Twin Falls	Public H. S.	Idaho	3	3	3	82.56
35	Santa Barbara	Public H. S.	California	2	1	3	82.14
36	Girls' High School	Public H. S.	San Francisco	1	1	1	82.04
37	Yakima	Public H. S.	Washington	1	1	1	81.98
38	Winnemucca	Public H. S.	Nevada	1	1	1	81.71
39	Wentworth	M. I. Acad.	Missouri	1	1	1	81.59
40	Washington, D. C.	Public H. S.	Washington, D. C.	1	1	1	81.52
41	Vallejo	Public H. S.	California	1	1	1	81.48
42	Hanford	Public H. S.	California	2	2	2	81.33
43	Washington	Public H. S.	New Jersey	1	1	1	81.07
44	Klamath Falls	Public H. S.	Oregon	1	1	1	81.02
45	Parsons	Public H. S.	Kansas	1	1	1	80.91
46	Santa Rosa	Public H. S.	California	5	1	6	80.42
47	Duluth	Public H. S.	Minnesota	2	2	2	80.19
48	Helena	Public H. S.	Montana	1	1	1	80.12
49	Colusa	Public H. S.	California	2	2	2	80.12
50	North Platte	Public H. S.	Nebraska	1	1	1	80.08
51	Santa Clara	Public H. S.	California	4	4	4	79.97
52	Rockford	Public H. S.	Illinois	1	1	1	79.55
53	Three Forks	Public H. S.	Montana	1	1	1	79.54
54	Lakeport	Public H. S.	California	1	1	1	79.34
55	Iowa City	Public H. S.	Iowa	1	1	1	79.31
56	Stockton	Public H. S.	California	3	1	4	79.20

	Name of School	Type of School	Location	Number of Students		Total	Average Sch'ship Rating
				Men	Women		
57	Elko	Public H. S.	Nevada	1	1	1	78.93
58	Willits	Public H. S.	California	1	1	1	78.87
59	Salt Lake City	Public H. S.	Utah	3	3	3	78.83
60	San Mateo	Public H. S.	California	3	5	8	78.75
61	Santa Paula	Public H. S.	California	1	1	1	78.74
62	Lodi	Public H. S.	California	1	1	1	78.71
63	Dinuba	Public H. S.	California	2	2	2	78.71
64	Evanston	Public H. S.	Illinois	1	1	1	78.51
65	Cummock	Private H. S.	Los Angeles	1	1	1	78.49
66	Detroit	Public H. S.	Michigan	1	1	1	78.38
67	San Rafael	Public H. S.	California	1	1	1	78.35
68	Riverside Girls'	Public H. S.	California	1	1	1	78.21
69	Valley City	Public H. S.	North Dakota	1	1	1	78.04
70	Ido	Public H. S.	Idaho	1	1	1	77.88
71	Waterville	Public H. S.	Washington	1	1	1	77.85
72	Coronado	Public H. S.	California	1	1	1	77.85
73	Morgan Park	Public H. S.	Chicago, Ill.	2	2	2	77.83
74	Ashland	Public H. S.	Ohio	1	1	1	77.76
75	Corvallis	Public H. S.	Oregon	1	1	1	77.60
76	Boise	Public H. S.	Idaho	1	1	1	77.54
77	Watseka	Public H. S.	Illinois	1	1	1	77.52
78	Cal. S. Mech. Arts	Public H. S.	San Francisco	12	12	12	77.52
79	Sanger	Public H. S.	California	1	1	1	77.33
80	Pasadena	Public H. S.	California	6	3	9	77.30
81	Terre Haute	Public H. S.	Indiana	2	2	2	77.28
82	Culver	Mil. Acad.	Indiana	4	4	4	77.15
83	Marysville	Public H. S.	California	1	1	1	76.94
84	Spokane	Public H. S.	Washington	4	4	4	76.89
85	Eureka	Public H. S.	California	3	3	3	76.82
86	San Jose	Public H. S.	California	14	4	18	76.74
87	San Diego	Public H. S.	California	4	1	5	76.71
88	Wm. Warren	Private H. S.	Menlo Park, Calif.	1	1	1	76.63
89	University	Public H. S.	Venice, Calif.	1	1	2	76.55
90	Woodland	Public H. S.	California	1	1	1	76.50
91	Fresno	Public H. S.	California	6	3	9	76.45
92	Jackson	Public H. S.	California	1	1	1	76.42
93	Girls' Collegiate	Private H. S.	Los Angeles	1	1	1	76.33
94	Swarthmore	Private H. S.	Pennsylvania	1	1	1	76.15
95	Sedro-Woolley	Public H. S.	Washington	1	1	1	75.90
96	Mansfield	Public H. S.	Ohio	1	1	1	75.88
97	Wilsall	Public H. S.	Montana	1	1	1	75.88
98	Portland	Public H. S.	Oregon	9	1	10	75.87
99	Walla Walla	Public H. S.	Washington	1	1	1	75.84
100	Palo Alto	Public H. S.	California	38	8	46	75.83
101	Auburn	Public H. S.	California	2	2	2	75.70
102	Ward-Belmont	Private H. S.	Nashville, Tenn.	1	1	1	75.30
103	Franklin	Public H. S.	Portland, Ore.	1	1	1	75.29
104	Potter	Private H. S.	San Francisco	7	7	7	75.29
105	Ripon	Public H. S.	California	1	1	1	75.24
106	Santa Cruz	Public H. S.	California	2	2	2	75.10
107	Oakland Univ.	Public H. S.	California	4	2	6	74.92
108	Virginia	Mil. Acad.	Staunton, Va.	1	1	1	74.92
109	Roseville	Public H. S.	California	3	3	3	74.91
110	San Bernardino	Public H. S.	California	3	1	4	74.80
111	Highland Park	Public H. S.	Michigan	1	1	1	74.67
112	Polytechnic	Public H. S.	Los Angeles	8	1	9	74.57

	Name of School	Type of School	Location	Number of Students		Total	Average Sch'ship Rating
				Men	Women		
113	Hollywood	Public H. S.	California	9	2	11	74.46
114	Polytechnic	Public H. S.	San Francisco	11	3	14	74.45
115	Missoula	Public H. S.	Montana	1	--	1	74.40
116	Patterson	Public H. S.	California	1	--	1	74.38
117	Los Angeles	Public H. S.	California	29	2	31	74.15
118	Bakersfield	Public H. S.	California	2	--	2	74.15
119	Corona	Public H. S.	California	--	1	1	74.01
120	Santa Monica	Public H. S.	California	6	--	6	73.64
121	Orange	Public H. S.	California	1	--	1	73.60
122	Senn	Public H. S.	Chicago, Ill.	1	--	1	73.50
123	Middleton	Public H. S.	California	1	--	1	73.45
124	Massey	Mil. Acad.	Tennessee	1	--	1	73.37
125	Scarborough	Private H. S.	New York	--	1	1	73.31
126	Abilene	Public H. S.	Texas	1	--	1	73.23
127	Gage City	Public H. S.	Oklahoma	1	--	1	73.13
128	Harlowton	Public H. S.	Montana	1	--	1	72.90
129	Miss Harker's	Private H. S.	Palo Alto, Calif.	--	3	3	72.82
130	Reedley	Public H. S.	California	1	--	1	72.64
131	Whittier	Public H. S.	California	1	--	1	72.61
132	Burbank	Public H. S.	California	1	--	1	72.60
133	Billings	Public H. S.	Montana	2	--	2	72.59
134	Gallatin	Public H. S.	Montana	2	--	2	72.57
135	Great Falls	Public H. S.	Montana	3	--	3	72.52
136	Allentown	Public H. S.	Pennsylvania	1	--	1	72.50
137	Redlands	Public H. S.	California	4	--	4	72.42
138	Sacramento	Public H. S.	California	3	3	6	72.35
139	Fremont	Public H. S.	California	1	--	1	72.35
140	Rupert	Public H. S.	Idaho	1	--	1	72.33
141	St. Johns	Mil. Acad.	Wisconsin	2	--	2	72.28
142	Lowell	Public H. S.	San Francisco	25	2	27	72.22
143	Kankakee	Public H. S.	Illinois	1	--	1	72.02
144	Nampa	Public H. S.	Idaho	--	1	1	72.00
145	Willows	Public H. S.	California	1	--	1	71.94
146	Kallispell	Public H. S.	Montana	2	--	2	71.79
147	Terrill	Public H. S.	Dallas, Tex.	1	--	1	71.76
148	Ceres	Public H. S.	California	1	--	1	71.64
149	Bishop	Public H. S.	California	3	--	3	71.41
150	Oberon	Public H. S.	North Dakota	1	--	1	71.41
151	La Grande	Public H. S.	Oregon	1	--	1	71.29
152	Montezuma	Private H. S.	Los Gatos, Calif.	5	--	5	70.71
153	Tracy	Public H. S.	California	1	--	1	70.63
154	Universty	Private H. S.	San Francisco	6	--	6	70.56
155	San Fernando	Public H. S.	California	1	--	1	70.18
156	Modesto	Public H. S.	California	6	--	6	70.13
157	Mountain View	Public H. S.	California	9	3	12	70.12
158	Protection	Public H. S.	Kansas	1	--	1	70.10
159	Napa	Public H. S.	California	1	--	1	70.04
160	Watsonville	Public H. S.	California	3	--	3	70.01
161	Petaluma	Public H. S.	California	2	--	2	69.95
162	Berkeley	Public H. S.	California	3	--	3	69.86
163	Tamalpais	Public H. S.	California	--	1	1	69.71
164	Fullerton	Public H. S.	California	1	--	1	69.64
165	Prosser	Public H. S.	Washington	1	--	1	69.40
166	College	Public H. S.	Los Angeles	--	1	1	69.22
167	Hitchcock	Mil. Acad.	California	1	--	1	68.75
168	Nevada City	Public H. S.	California	1	--	1	68.66
169	San Diego	A. & N. Acad.	California	3	--	3	68.65
170	Coeur d'Alene	Public H. S.	Idaho	1	--	1	68.64

Name of School	Type of School	Location	Number of Students		Total	Average Sch'ship Rating
			Men	Women		
171 Clovis	Public H. S.	California	3		3	68.62
172 Glynn	Academy	Brunswick, Ga.	1		1	68.37
173 Santa Ana	Public H. S.	California	3		3	68.25
174 Merced	Public H. S.	California	1		1	67.98
175 Sebastopol	Public H. S.	California	1		1	67.98
176 Phoenix	Public H. S.	Arizona	4		4	67.86
177 Wilmington	Public H. S.	California	2		2	67.54
178 Dickinson	Public H. S.	North Dakota	1		1	67.18
179 Harvard	Mil. Acad.	California	3		3	67.12
180 Red Bluff	Public H. S.	California	1		1	66.84
181 San Antonio	Public H. S.	Texas	3		3	66.18
182 Oakdale	Public H. S.	California	1		1	65.78
183 Waukegan	Public H. S.	Illinois	1		1	65.53
184 Buhl	Public H. S.	Idaho	1		1	65.50
185 La Grange	Public H. S.	Illinois	1		1	65.50
186 Los Gatos	Public H. S.	California	1		1	65.28
187 Shattuck	Private H. S.	Berkeley, Calif.	2		2	65.22
188 Alameda	Public H. S.	California	1		1	64.86
189 Tucson	Public H. S.	Arizona	1		1	64.67
190 Oakland Tech.	Public H. S.	California	1		1	63.54
191 Lewiston	Public H. S.	Idaho	2		2	63.48
192 Princeton	Public H. S.	California	1		1	62.66
193 Gardnerville	Public H. S.	Nevada	1		1	62.24
194 Elk City	Public H. S.	Oklahoma	1		1	61.71
195 Fairmont	Public H. S.	Minnesota	1		1	61.58
196 South Pasadena	Public H. S.	California	1		1	61.41
197 Chico	Public H. S.	California	2		2	61.00
198 Brookville	Public H. S.	Pennsylvania	1		1	60.87
199 Rosebud	Public H. S.	Montana	1		1	60.84
200 Myrtle Creek	Public H. S.	Oregon	1		1	60.82
201 Mt. Tamalpais	Mil. Acad.	California	1		1	60.32
202 Dallas	Public H. S.	Texas	1		1	59.64
203 Uniontown	Public H. S.	Pennsylvania	1		1	59.14
204 Wellston	Public H. S.	Ohio	1		1	59.10
205 Randolph	Private H. S.	Berkeley, Calif.	1		1	56.86
206 Ashland	Public H. S.	Ohio	1		1	56.81
207 Adin	Public H. S.	California	3		3	56.54
208 Wasco	Public H. S.	California	1		1	55.97
209 Palo Alto	Mil. Acad.	California	3		3	54.27
210 Abilene	Public H. S.	Texas	1		1	54.03
211 Placerville	Public H. S.	California	1		1	53.69
212 Ontario	Public H. S.	California	1		1	52.59
213 Hughson	Public H. S.	California	1		1	50.58
214 Lincoln (L. A.)	Public H. S.	California	1		1	48.81
215 Alhambra	Public H. S.	California	1		1	48.74
216 Tulsa	Public H. S.	Oklahoma	1		1	47.85
217 Lincoln Union	Public H. S.	California	1		1	47.13
218 Chadron	Public H. S.	Nebraska	1		1	46.61
219 Libertyville	Public H. S.	Illinois	1		1	46.48
220 Country Day	Public H. S.	Missouri	1		1	46.07
221 Monterey	Public H. S.	California	2		2	45.96
222 Delta	Public H. S.	Colorado	1		1	43.22
223 Castle Heights	Mil. Acad.	Tennessee	1		1	40.40
224 Seale	Mil. Acad.	Palo Alto	1		1	38.92
225 Jefferson	Public H. S.	Los Angeles	1		1	38.06
226 Roswell	Public H. S.	New Mexico	1		1	35.00

Leave of absence (no record)—Franklin, Ft. Bragg, Mission, Lone Prairie, Salinas, Punahou Academy.

STATISTICS OF GRADUATION

The total number of degrees conferred in 1920-21 (October, January, April, and June) was 551, distributed as follows:

	Ph.D.	M.D.	J.D.	A.M.	Eng'r	LL.B.	A.B.
Bacteriology and Experim'l Pathology	--	--	--	--	--	--	7
Botany	1	--	--	2	--	--	6
Chemistry	2	--	--	6	7	--	30
Economics	--	--	--	8	--	--	94
Education	--	--	--	17	--	--	18
Education (Graphic Art)	--	--	--	--	--	--	6
Engineering--							
Civil	--	--	--	--	--	--	14
Electrical	--	--	--	--	7	--	--
Mechanical	--	--	--	--	2	--	37
English	--	--	--	13	--	--	25
Entomology	1	--	--	--	--	--	2
Geology	--	--	--	1	--	--	20
Germanic Languages	--	--	--	2	--	--	2
Greek	--	--	--	1	--	--	--
History	--	--	--	7	--	--	28
Latin	--	--	--	--	--	--	2
Pre-legal	--	--	--	--	--	9	42
Law	--	--	22	--	--	--	--
Mathematics	--	--	--	1	--	--	9
Medicine	--	17	--	--	--	--	--
Mining and Metallurgy	--	--	--	--	2	--	--
Philosophy	--	--	--	2	--	--	3
Physics	1	--	--	--	--	--	1
Physiology	--	--	--	--	--	--	8
Political Science	--	--	--	1	--	--	5
Pre-Clinical	--	--	--	--	--	--	17
Psychology	--	--	--	--	--	--	3
Romanic Languages	--	--	--	4	--	--	17
Zoology	--	1	--	--	--	--	4
At Large	--	--	--	--	--	--	2
Totals	5	17	22	65	18	9	415

ORRIN LESLIE ELLIOTT,

Registrar.

APPENDIX V.

PUBLICATIONS OF THE FACULTY

September 1, 1920—August 31, 1921

(Compiled in the Reference Division of the Library)

DAVID STARR JORDAN, Chancellor Emeritus:

The fish fauna of the California Tertiary: *Stanford university publications. University series. Biological sciences*, vol. 1, No. 4, July, 1921

Fish stories of the fathers: *American angler*, vol. 5, September, 1920

Franz Steindachner: *Science*, n. s., vol. 53, January 21, 1921

The fur seals: *Science*, n. s., vol. 52, September 3, 1920

The great white shark: *Guide to nature*, vol. 113, October, 1920

Geminate species: *Eugenics review*, vol. 12, October, 1920

The genera of fishes. Part IV: *Leland Stanford Junior University publications. University series*, 1920

Japanese in California: *Pacific review*, vol. 1, December, 1920

Meaning of pacifism: *Stanford*, vol. 1, January, 1921

A message . . . To be tied down to the elements of education is not a university's function: *Stanford illustrated review*, vol. 22, April, 1921

A national university: *Bowden, W. T. National crisis in education. U. S. Bureau of Education Bulletin*. 1920, No. 29

The political outlook: *Unity*, vol. 87, May 5, 1921

Should the United States have a mandate over Mexico?: *Pittsburg dispatch*, November 21, 1920

The story of Matka. New York, 1921, World book Co. (Animal life series)

Two Germanys: *Unity*, vol. 86, October 14, 1920

Xiphister vs. Xiphidion: *Copeia*, June 15, 1921

RAY LYMAN WILBUR, President:

Address: *University of California. The inauguration of David Prescott Barrows*. Berkeley, 1920

Alumni address: *Stanford illustrated review*, vol. 21, October, 1920

Annual report of the President for the 29th academic year ending August 31, 1920: *Leland Stanford Junior University publications. Trustees series*, 1920

The community function of the hospital: *Better health*, vol. 2, August, 1921

Disarmament a symposium: *Christian work*, April 9, 1921

Initiative antivivisection measure: *Commonwealth club of California. Transactions*. vol. 15, August, 1920

- Limitation of students: A problem: *Stanford illustrated review*, vol. 22, January, 1921
- The lower division: *Stanford quad*, 1922
- The President's message: *Stanford*, vol. 1, January, 1921
- Section on public health, [Chairman's] report: *Commonwealth club of California. Transactions*. Vol. 15, February, 1921
- Stanford's progress is measured: *Stanford illustrated review*, vol. 22, June, 1921
- Symposium on smallpox. III. Vaccination and the student: *American journal of public health*, vol. 11, February, 1921
- Talk before the alumni, June 20, 1920: *Stanford illustrated review*, vol. 22, October, 1920.

REGISTRAR

ORRIN LESLIE ELLIOTT:

- Changes in methods of admission: *Stanford illustrated review*, vol. 22, March, 1921

ALUMNI SECRETARY

JOHN EZRA MCDOWELL:

- Editor and compiler. Stanford University alumni directory and ten-year book. (Graduates and non-graduates). III. 1891-1920, Stanford University, California, 1921.

DEAN OF MEN

GEORGE BLISS CULVER:

- Message from the new Dean of Men: *Stanford illustrated review*, vol. 21, October, 1920
- A new union for Stanford: *Ibid.*, vol. 22, p. 140, January, 1921

ANATOMY

ARTHUR WILLIAM MEYER:

- A challenge to Mr. Ross and Christian Scientists: *Daily Palo Alto times*, December 14, 1920
- A community problem (with H. B. Reynolds): *Ibid.*, December 7, 1920
- Disputes Ross on vaccination: *Ibid.*, December 22, 1920
- The frequency and cause of abortion: *American journal of obstetrics and gynecology*, vol. 11, August, 1921
- Unrecognized occupational destruction of the tendon of the long head of the biceps brachii: *Archives of surgery*, vol. 2, January, 1921

APPLIED MATHEMATICS

SIDNEY DEAN TOWNLEY:

- Amendment No. 16: *Daily Palo Alto times*, October 28, 1920.
- Financial school problems of Santa Clara county: *Daily Palo Alto times*, January 7, 1921; *San Jose mercury herald*, January 10, 1921.
- High school students hear of educational needs from Dr. Townley: *Daily Palo Alto times*, January 28, 1921.

Notes on the variables 9. 1914 and RT Vulpeculae: *Popular astronomy*, vol. 29, February, 1921.

Editor, *Seismological society of America. Bulletin*.

WILLIAM ALBERT MANNING:

Primitive groups. Part I: *Stanford university publications. University series. Mathematics and astronomy*, vol. 1, No. 1, 1921.

BACTERIOLOGY

WILFRED HAMILTON MANWARING:

Intestinal and hepatic reactions in anaphylaxis: *American medical association. Journal*, vol. 77, September 10, 1921.

An introductory course in functional pathology for second year medical students: *Ibid.*, vol. 76, April 23, 1921.

A non-technical course in "Anatomy and physiology of disease" for undergraduate college students: *Ibid.*, vol. 76, June 25, 1921.

EDWIN WILLIAM SCHULTZ:

The acidity of goat's milk in terms of hydrogen-ion concentration, with comparisons to that of cow's and human milk (with L. R. Chandler): *Journal of biological chemistry*, vol. 46, March, 1921

Etiology of typhus fever: *American journal of medical science*, vol. 161, 1921

The relationship between the hydrogen-ion concentration and bacterial count of commercial milk, a preliminary report (with Alberta Marx and H. J. Beaver): *Journal of dairy science*, vol. 4, January, 1921

The size of the fat globules in goat's milk (with L. R. Chandler): *Journal of biological chemistry*, vol. 46, March, 1921

BOTANY

DOUGLAS HOUGHTON CAMPBELL:

The genus *Botrychium* and its relationships: *National academy of sciences. Proceedings*, vol. 6, August, 1920

Some botanical and environmental aspects of Hawaii: *Ecology*, vol. 1, October, 1920.

CHEMISTRY

JOHN MAXSON STILLMAN, Emeritus:

Theophrastus Bombastus von Hohenheim called Paracelsus, his personality and influence as physician, chemist and reformer. 184 pp., Chicago & London. 1920. Open Court Publishing Co.

JOHN PEARCE MITCHELL:

Board of athletic control: *Stanford quad*, 1922.

Progress in the lower division: *Stanford illustrated review*, vol. 22, February, 1921.

FLORIAN A. CAJORI:

Some nutritive properties of nuts; their proteins and content of water-soluble vitamins: *Journal of biological chemistry*, vol. 43, September, 1920

NORRIS WATSON RAKESTRAW:

Chemical factors in fatigue. I. The effect of muscular exercise upon certain common blood constituents. A thesis presented to the Department of Chemistry . . . for the degree of Ph.D. Reprinted from *Journal of biological chemistry*, vol. 47, August, 1921

ECONOMICS

ALBERT CONSER WHITAKER:

The gold standard today: *Bulletin of the Robert Morris associates*, vol. 4, August, 1921

ELIOT JONES:

The Webb-Pomerene act: *Journal of political economy*, vol. 28, November, 1920

The Esch-Cummins act: *Grinnell review*, vol. 16, March, 1921

EDUCATION

ELLWOOD PATTERSON CUBBERLEY:

The history of education. 849 p. Boston, 1920, Houghton Mifflin & Co. (*Riverside textbook in education*).

Making the rural school efficient: *California taxpayer's journal*, vol. 4, September, 1920

Readings in the history of education. 684 p., Boston, 1920, Houghton Mifflin & Co. (*Riverside textbooks in education*)

Report of the special legislative committee on education as authorized by senate concurrent resolution no. 21 by the 43d session of the legislature of California. 96 p. Sacramento, 1920, State Printing office

Editor, Riverside text books in education: Averill, L. A., Psychology for normal schools, 362 p., Boston, 1921, Houghton Mifflin Co.

LEWIS MADISON Terman:

Age and grade forms for the National intelligence test, Scales A and B (with E. D. Whitmire): *Journal of educational research*, vol. 3, February, 1921.

Dr. Ruml's criticism of mental test problems (with T. L. Kelley): *Journal of philosophy*, vol. 18, August 18, 1921.

Educational research by members of the American psychological association. Editorial: *Journal of educational research*, vol. 3, January, 1921

Intelligence and its measurement II: *Journal of educational psychology*, vol. 12, March, 1921.

Intelligence tests in colleges and universities: *School and society*, vol. 13, April 23, 1921

Preliminary report on a gifted juvenile author (with Jessie C. Fenton): *Journal of applied psychology*, vol. 5, June, 1921.

The psychology, biology and pedagogy of genius. Review of literature since 1914. (With J. M. Chase): *Psychological bulletin*, vol. 17, December, 1920.

Status of applied psychology in the United States: *Journal of applied psychology*, vol. 5, March, 1921

What tests are for (editorial): *Journal of educational research*, vol. 2, September, 1920.

Associate editor, *Journal of applied psychology*, Worcester, Mass., *Journal of educational psychology*, Baltimore, Md., *Journal of educational research*, Urbana, Ill., *Journal of delinquency*, Whittier, Cal.

TRUMAN LEE KELLEY:

Alignment chart of correlation functions, 17x23: *Stanford university publications. School of education. Special monograph No. 1 Supplement*, 1921.

Chart to facilitate the calculation of partial coefficients of correlation and regression equations: *Stanford university publications. School of education. Special monograph No. 1*, 1921

Dr. Ruml's criticism of mental test methods (with L. M. Terman): *Journal of philosophy*, vol. 18, August, 1921.

A new measure of dispersion: *American statistical association. Quarterly publication.* n. s. vol. 17, June 1921

The reliability of test scores: *Journal of educational research*, vol. 3, May, 1921.

PERCY ERWIN DAVIDSON:

Equality of educational opportunity; the views of the economists: *School and society*, vol. 12, December 4, 1920.

Freedom of teaching in the high schools: *Ibid.*, vol. 13, March 5, April 9, 1921.

The socialists on equality of educational opportunity: *Ibid.*, vol. 13, April 2, 1921

WILLIAM MARTIN PROCTOR:

The use of psychological tests in the educational and vocational guidance of high school pupils . . . abstract of a thesis presented to the Department of Education . . . for the degree of Ph.D., 70 p., Bloomington, Ill., 1921; Same with title Psychological tests and guidance of high school pupils: *Journal of educational research monographs* No. 1, June, 1921

EDUCATION—DIVISION OF GRAPHIC ART

ARTHUR BRIDGMAN CLARK:

Art principles in house, furniture, and village building . . . 128 p., Stanford university press, 1921.

ELECTRICAL ENGINEERING

HARRIS J. RYAN:

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